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TOTAL WAR ON CANCER*

BY

G. F. STEBBING, M.B., B.S., F.R.C.S., F.F.R.

Hon. Secretary, Radium Commission

That we have to make *war* on cancer is no new idea; indeed, the British Empire Cancer Campaign in its title makes use of a military term, for the first meanings of "campaign" in the Oxford English Dictionary are: A series of military operations in a definite theatre with one objective; organized course of action.

Up to the beginning of the war of 1914–18 the idea in most people's minds was that war was a business for the fighting forces of the opposing countries, and it was a rude shock for many of us to find that the line between the fighting forces and the civilians was not very clearly defined, and that before that conflict was ended a large number of civilians had had to play an important part in the effort for victory. The war that has recently ended has made it clear to everybody, in every nation, that hostilities are no longer the concern only of the military forces but that every man, woman, and child of each side is exposed to the dangers of the fighting and must play a full part in the complex activities necessary to enable victory to be achieved.

An Insidious Foe

When our Campaign was started it was realized that our foe, cancer, was an insidious and mysterious foe, and that if we were to overcome it we should have to organize a series of operations on a wide scale in a definite field and with the objectives of discovering the cause of and finding a cure for cancer. It was envisaged that the soldiers who would do the fighting were the scientists in the laboratories and the doctors in the consulting-rooms and operating theatres, and that to keep them at work under the best conditions they must be helped by an organization that would provide laboratories and hospitals with whatever funds were necessary to carry on the war. It was a campaign such as we were familiar with in the military sense in those days, and some notable victories were won. Some of the causes of cancer have been ascertained, and some methods of treatment of great value have been evolved: these represent battles that have been won; but the war goes on, and we are still a long way from victory.

The Registrar-General states that 600,000 people died in England and Wales during 1944, that 71,814 of these were certified as having died of cancer, and he tells us that cancer is the second commonest cause of death. There is a very important thing to note about this figure: since the Registrar-General began to analyse the causes of death the number of deaths attributed to cancer increased slowly but surely every year until 1944, and in that year, for the first time, the number was smaller than in the year before—smaller by 226. Many factors have to be taken into consideration, but there is reason to hope that this may mean the turning of the tide, and that a small beginning has been made in reducing the annual toll. But the beginning is very small, and if we cannot do better than that we shall remain a long way from victory.

It is often said that cancer is a disease of old people, and that the high total of deaths from it is less important for that reason. But the Registrar-General's figures show that nearly one-half (29,000) of cancer deaths occur between the ages of 45 and 65—that is to say, at the time when parents have families in course of education and when business and professional responsibilities are at their greatest. It is often also urged that the struggle against cancer is less important than the struggle against infective and nutritional diseases, because these are a more hopeful field of activity and younger lives may be saved by efforts directed against their causes. To this the answer must be that the struggle against all of them must go on side by side, and, indeed, if we are properly organized each will help the other: of that I shall have something to say later.

What is the thesis that I would put before you? It is this: I believe that cancer can be conquered, but that we shall not conquer it until we replace the old type of military campaign by Total War—that is, war in which all modern methods of attack are used for all they are worth, and in which everyone in the nation joins in the effort to secure success. Now, I want to make it clear that, with our knowledge in its present state, I do not pretend that we can prevent all deaths from cancer, but I do claim that if all cases were recognized early, and treated promptly and efficiently, nearly half—that is to say, some 30,000 people in England and Wales—would be saved from death by this disease each year. I claim, too, that the discoveries that have been made during the last ten years give good grounds for hoping that the hard core of the other half will yield to further well-planned and intensive research.

Recognition of Early Symptoms

May I describe to you the total war that I envisage? Cancer starts in every case with a single cell or group of cells in the body that revolt, as it were, against the general system. Instead of quietly performing their functions as they should, these cells take on a rogue's growth that not only is of no use to the patient but ultimately destroys the function of the organ in which they occur, and they gradually extend beyond it to the neighbouring organs till they cause the patient's death. These rogue cells may start in almost any tissue of the body, so that the recognition and treatment of cancer must form a part of the work of many specialists, such as general surgeons, gynaecologists, laryngologists, and others. The disease at its beginning is a small patch localized to one part of the body, and if it is recognized in that state it can generally be surgically removed or be destroyed by irradiation, with an assurance that it will not come back. If not recognized in that early stage it becomes much more difficult to remove completely, and if any of it is left behind the disease will surely recur—and the treatment of recurrences is much less successful than treatment in the earlier stage of the disease.

There is another reason why it is important to recognize cancer early, and that is that after the disease has been present some time bits of the growth break away and are carried by the circulation to distant parts of the body, where they lodge, and such bits may cause secondary growths similar to the one which started the trouble. Such secondary growths are often

* A paper read at the annual meeting of the Notts Branch of the British Empire Cancer Campaign.

numerous, and are liable to occur in places whence surgery cannot remove them, and where treatment by irradiation is difficult.

To obtain the best results with our present knowledge we have to recognize cancer in its earliest stages, and that is not easy. Often the earliest symptom is some interference with our normal functions, and such derangements are caused by many things besides cancer. In fact, disorders of function are much more commonly due to simple causes than to cancer, and it is for this reason that cancer is so often overlooked. In deeply seated cancers the early diagnosis can often be made only after an examination by a team of experts each of whom plays his or her part in a well-directed scheme.

Co-ordination of Effort

Total war cannot be waged by various individuals working on their own and holding little communication with each other. There must be a responsible person to co-ordinate the work of innumerable specialists and to direct their efforts towards the desired end.

Experience which has been gained during the last fifteen years or so has shown that an organization for the diagnosis and treatment of cancer is most likely to be efficient if it deals with a population of two to four million people. Such a number will provide enough cases of cancer in the different sites of the body to make expert those who have to handle them, and yet will not be too unwieldy to organize. The headquarters of such an organization must be in, or in close relation to, a general hospital which is staffed and equipped to deal with every kind of work, and be closely associated with a medical school and faculty of a university; for not only must research be carried on in every cancer organization but the stimulating atmosphere of the teaching school should be recognized as a valuable asset.

On the headquarters staff there must be specialists of every type, who, though not devoting their whole time to the treatment of cancer, should have a wide experience of it. For the early recognition of the disease there must be consultation clinics, in which surgical specialists, radiotherapists, radiodiagnosticians, pathologists, and biochemists all have their part to play; and to get the best results such specialists should have frequent consultations, for preference in the patient's presence. Treatment of the patient should be fully planned before it is begun, and be carried out by those members of the staff best able to do it. At the headquarters clinic, arrangements must be made for dealing with all difficult cases sent in from the periphery, and the person responsible for the co-ordination of the work must see that there is no delay at any stage. As soon as cancer is suspected in anyone anywhere in the region, examination and any necessary consultation must be arranged, and treatment started at once. A month or two of delay may cost a life.

The organization of hospital work these days is very complex, and even teaching hospitals cannot all have every one of the special departments needed for the treatment of cancer; but there must be effective and close co-operation between the headquarters and such units as neurosurgery, thoracic surgery, plastic surgery, orthopaedic surgery, etc. In the treatment of cancer, surgery and radiotherapy should play about an equal part; sometimes the one is the better, sometimes the other, but in many cases both are needed to get the best results. Surgery has a double part to play, for the diagnosis can often be made only by operation and the aid of the pathologist, whose department should be intimately associated with the organization.

In the headquarters unit there must be a fully equipped and staffed radiotherapeutic unit. Radiotherapy is still a young science, having been introduced less than half a century ago, and modern methods of radiotherapy in this country are less than twenty years old. Its practice requires specialists who devote the whole of their time to it and who have at their command enough apparatus to make sure that they can give to the patient the treatment that is best suited to him at the time he will benefit most. In practice this means that they must have at least four or five different sets of *x*-ray therapy apparatus for routine use, and two or three for experimental work. They must have a gramme or more of radium and either a radium beam or a supervoltage apparatus. They must also have the assistance of two or more physicists specially trained in hospital work and provided with all the laboratories and workshops they need. There is a great expectation that the discoveries which became public when the atomic bomb was used will play a great part in the future of medicine, and particularly in the treatment of cancer. There is some danger that too much may be expected of the benefits to be derived either in industry or in medicine from recent discoveries in nuclear physics, but it is quite clear that without a great deal of research we shall not know how much use atomic physics may be in medicine, and that research will have to be done in a large measure by men who are actively engaged in the treatment of patients and who know the problems that have to be solved. The radiotherapists, the physicists, and the biochemists will have to be equipped to take advantage at once of any discoveries that are made.

The work of the cancer organization will not be confined to the headquarters unit. A few large hospitals in the region must be staffed and equipped to carry out treatment by surgery, and one or two of them to provide radiotherapy. It is important that the work should be done only in hospitals large enough to have specialists of all types and all the skilled staff and equipment which modern treatment needs.

I have said that surgeons dealing with cancer should not devote the whole of their time to its treatment. Such a limitation of their experience would not produce the best results. It is desirable, however, that surgeons (and in that term I include all surgical specialists such as laryngologists, gynaecologists, etc.) dealing with cancer should have the opportunity of becoming expert by handling large numbers of cases. To this end the cancer patients should be so distributed that each member of the staff will deal with one or two types of the disease only, instead of each of them trying to deal with all types.

Diagnostic Clinics

In addition to the hospitals where cancer is treated there must be a larger number at which patients can attend for preliminary investigation if their family doctors suspect the possibility of cancer. It is desirable that arrangements be made for doctors to attend such clinics with their patients. Such clinics should be attended by the specialists on the staff of the cancer organization who are actively engaged in the treatment of cancer. These diagnostic clinics may be used also for the purpose of following up treated patients so that they may be periodically examined. The cancer organization must not stop, however, at the hospitals that take part in its work. Our war will not be total unless the family doctor is a part of it and patients are aware of its existence and willing to play their part.

Although cancer is the second commonest cause of death it is not a common disease. That paradox arises from the fact that hitherto most patients who develop a cancer have (I think quite unnecessarily) died of it, whereas in most other diseases the majority of sufferers get well. So it comes about that a family doctor sees many cases of tonsillitis, pneumonia, etc., every year but not many cases of cancer. Dividing the number of cancer deaths evenly among the doctors in general practice means that each would see only about two cases a year. But the doctors in general practice have got to suspect cancer many times a year if they are not going to miss the early case, and we want a well-worn path from every doctor's surgery to the diagnostic clinic, whether it be at the headquarters hospital, at one of the large treatment centres, or at a hospital providing only a preliminary investigation centre. If the family doctor is to be enabled to play his part in the total war he must be in constant communication with the organization, he must receive a report of all investigations and periodic reports on treatment and its results, and he must be encouraged to help in securing the regular follow-up and re-examination of patients at the proper times.

This constant and close association of the family doctor with the cancer organization is essential for the success of our total war, but it will serve another purpose, to which I have already made a brief allusion. I have said that if the growth is to be detected early the general practitioner has got to suspect cancer in many patients for every one that actually has it. He must have it in mind whenever he sees a patient complaining of a

disordered function the cause of which is not revealed by such methods of investigation as he can apply. If such a case is referred to the cancer organization for full examination and cancer is not found, a diagnosis of some other disease will be made, and our war on cancer will, in such cases, help on our fight against other less lethal but very troublesome diseases.

But the patient too has a duty. He must not put off reporting to his doctor any disturbance of function that lasts more than a few days. He must let him decide whether the disturbance is such that it requires further investigation, and if the doctor seems to make light of it at the first visit he must not be deterred from going to him again if the disturbance persists.

It is one of the characteristics of human nature that when we are afraid of a thing we tend to shy away from it, to put off facing it although we know that sooner or later this will have to be done. This leads some people to postpone their visit to the doctor for fear of what he may tell them. To overcome this fear is the patient's part in the total war, just as it is the family doctor's part to use that well-worn path to the diagnostic clinic whenever a suspicious symptom presents itself.

An organization such as I have described does not run itself—it needs an elaborate mechanism. The person charged with the co-ordination of it should be a medical man with a lifelong experience of cancer. He must have a technical committee on which specialists and general practitioners should be represented, and he should see that there is frequent consultation and discussion between all those who are engaged in the diagnosis and treatment of cancer in the region. He must see that there are adequate bed accommodation and proper equipment for all kinds of treatment; he must see that the secretarial services are such that every clinician is given clerks to enable him to take adequate notes, and that doctors throughout the region are kept fully informed about their patients; he must see, too, that there is a statistical bureau under a trained statistician to analyse the work of the organization and the results obtained; he must be in touch with pathological, physical, and biological research and give the workers in the organization an opportunity of hearing of and discussing new discoveries; he must see that the existence and purpose of such an organization are known to all doctors and patients in his region; and he must study the methods best calculated to secure the objects of the organization—that is, the early recognition and prompt treatment of cancer.

Care of Patients in the Late Stages of Cancer

But when all that is done we have not finished. For many years to come there will be a number of patients who, because of their own neglect or the failure of our organization or the limitation of our knowledge, reach a stage in which they still have cancer and cannot be further benefited by surgery or irradiation. We are cowards if we shut our eyes to the existence of these. Much can be done to lessen their sufferings, and the cancer organization should be charged with the duty of providing for their care and treatment, whether it be at their own homes, in nursing homes, or in hospital wards; they should be under constant review by the members of the organization staff by whom they were, or might have been, treated, so that comfort may be provided for the patient and education for the staff. And here I would like to stress the great importance of obtaining post-mortem examinations on all who die of cancer or suspected cancer. The pathological department has the duty of helping greatly in diagnosis by the microscopical examination of small pieces of tissue removed at operation. The accuracy of such diagnosis is greatly increased if the pathologists of the organization have the opportunity of making careful post-mortem examinations; and often the causes that have prevented successful treatment can then be found. During the late war our patients did not hesitate to expose their living bodies to danger when the drive for victory needed it. Should they not now allow their dead bodies to be used to help our total war on cancer?

Two years ago Prof. Dodds, at the Annual Meeting of the British Empire Cancer Campaign, reported the startling, and favourable, results that had been obtained in the treatment of one type of cancer by synthetic hormones. This is the first example of the combat of a cancer by such means, but it is almost certain that it will be followed by other successes on the same lines, and many cases that are untreatable now will then become treatable.

Research

I must say a word or two about research. Every cancer organization, if it is to play its full part in the total war, must have a research department, which should have the advantage of working in close association with the scientific faculties of a university. Our ideas about the medical faculties of universities are rapidly enlarging as we realize that if our medical services are to be efficient the university must continue to educate the graduate after it has finished educating the undergraduate. To that end many hospitals not now intimately associated with the medical schools will have to take part in continuing the education of the newly qualified and providing refresher courses for the older graduates. The research department should be in very close touch with the medical staff of these hospitals, so that the line, which is at present undesirably broad, between laboratory research and clinical research should become less clearly defined. It is quite obvious that discoveries made in the laboratory have not served any useful purpose until they have become known to and been used by the doctors who are treating patients. It generally takes some years before discoveries such as penicillin, or the hormone used by Prof. Dodds, are widely and successfully employed in the treatment of patients who may benefit by them. It should be one of the functions of our organization that when such discoveries are made they should be readily available to all sufferers from cancer who might benefit by them.

Conclusion

Such an organization is what I mean by "total war on cancer." It sounds very elaborate and must be very expensive. It is; but remember that the object is to save much suffering and 70,000 lives a year. We shall not save them all for many years to come, but I believe half of them could be saved now, and the British Empire Cancer Campaign has a very honourable reputation for that kind of research which will in the long run, I believe, lead to ultimate complete victory.

The Cancer Act, 1939, had in view the provision of such organizations to cover the whole country, but it is to be regretted that the war has caused its operation to be repeatedly postponed. Here in the East Midlands you have an organization in process of being formed; and the Nottingham General Hospital, with the Sheffield Royal Infirmary, Leicester Royal Infirmary, and Derbyshire Royal Infirmary, are cast to play the leading parts under the auspices of Sheffield University.

Whatever shape the National Medical Service may take, it should make easier the co-ordination of medical work over the whole region of the East Midlands. But these activities of the State, however necessary they may be in our complicated life, make only a framework in which men and women work. The recent war has shown us the great importance of having, in addition to State direction, State control, and State enterprise, voluntary bodies such as the British Red Cross and the Order of St. John of Jerusalem, which devote their time and attention to filling in those gaps that always exist in bureaucratic schemes. State concerns lack so many of the virtues which voluntary bodies can possess. In the winning of our total war against cancer I pin my faith to that enthusiasm and voluntary effort of which your branch of the British Empire Cancer Campaign is a shining example.

After long delay caused by printing difficulties the Rothamsted Experimental Station has published a pamphlet recording the centenary celebrations on July 1, 1943. This opens with an account of the work and history of the departments by the director, Sir John Russell, F.R.S. Addresses were given by the chairman, the Earl of Radnor, and the then Minister of Agriculture, Mr. R. S. Hudson; and a letter was read from the Duke of Devonshire paying tribute to the work of Rothamsted. The list of those taking part in the commemoration includes the names of Sir Henry Dale, at that time President of the Royal Society, the late Prof. W. W. C. Topley, F.R.S., secretary of the Agricultural Research Council, and Prof. C. R. Harington, F.R.S., representing the Medical Research Council. The pamphlet also includes messages of congratulation from the Empire and associated countries and from foreign and home sources.

SOME OBSERVATIONS ON LIVER FUNCTION TESTS IN DISEASES NOT PRIMARILY HEPATIC

BY

A. BARHAM CARTER, M.D., M.R.C.P., D.P.M.
Physician, Ashford County Hospital

AND

N. F. MACLAGAN, M.D., D.Sc., M.R.C.P.
Biochemist to Westminster Hospital

(From the Wards and E.M.S. Sector Pathological Laboratory, Ashford County Hospital, Middlesex, and Westminster Hospital Medical School)

The liver is dependent upon a pure and unrestricted blood supply for the normal performance of its many functions. It is therefore not surprising that a proportion of abnormal results with a variety of liver function tests should have been recorded in conditions such as pneumonia (Curphey and Solomon, 1938), heart failure (Bernstein *et al.*, 1942; Chávez *et al.*, 1943), hyperthyroidism (Haines *et al.*, 1939; Lichtman, 1941; Maclagan and Rundle, 1940), rheumatoid arthritis (Rawls *et al.*, 1937), glandular fever (Kilham and Steigman, 1942; Davis *et al.*, 1945), after surgical operations (Boyce, 1941), and in therapeutic malaria (Fredericks and Hoffbauer, 1945; Kopp and Solomon, 1943).

Thus while the principal use of liver function tests is naturally in the investigation of gross liver disease, the interpretation of results is also sometimes dependent upon a knowledge of the reaction of the liver to disturbances of a more general nature. For example, the discovery of certain types of functional impairment in a patient with an enlarged liver would ordinarily suggest the probability of cirrhosis, but, if congestive heart failure were also present, then chronic passive congestion of the liver might well explain the findings. A further complication in the case of the flocculation tests is the uncertainty as to their mechanism. Recent work suggests that they depend principally upon changes in the serum gamma-globulin content (Kabat *et al.*, 1943; Moore *et al.*, 1945), and increases in this fraction are not confined to liver disease, but may occur in conditions such as rheumatic fever, aplastic anaemia, and peritonitis (Longsworth *et al.*, 1939). Moreover, many circulating antibodies are known to occur principally in the gamma-globulin fraction (Enders, 1944).

The possibility of false positive reactions is therefore a real one, although this has not seriously interfered with the application of these tests to the study of liver disease in the case of cephalin-cholesterol (Hanger, 1939), the serum colloidal-gold (Gray, 1940; Maclagan, 1944a), and the thymol turbidity tests (Maclagan, 1944b). This type of interference appears, however, to be more common with the Takata-Ara reaction (Magath, 1940).

The above considerations suggested to us that it would be worth while to define more closely the nature and degree of the abnormalities likely to be encountered in certain conditions not primarily involving the liver, using the two flocculation tests—the serum colloidal-gold reaction and the thymol turbidity test—which we had found of particular value in the diagnosis of gross liver disease. Qualitative tests for urinary urobilin were also used as a confirmatory procedure.

Methods

The serum colloidal-gold test was performed as previously described (Maclagan, 1944a). Normal serum gives a negative result with this test—recorded as 0 in the tables below—and 5+ is the strongest positive. The thymol turbidity test (Maclagan, 1944b) is expressed in units, normal limits being 0 to 4. Urine urobilin tests were made by spectroscopic examination with a direct-vision hand spectroscope, using a 1-in. (2.5-cm.) layer, after converting urobilinogen to urobilin by the addition of a few drops of iodine 1% solution and acetic acid. Particular care was taken to obtain fresh afternoon specimens and to mix any deposit thoroughly with the main bulk before testing.

Material

The diseases chosen for the study were originally those in which liver involvement had been reported by others (e.g., heart failure, glandular fever, rheumatoid arthritis), but accidental positive findings led to the inclusion of malaria and infective endocarditis. The material is shown in detail in Table I, and

TABLE I.—*Summary of 123 Cases Tested*

Diagnosis	No. of Cases	% Gold-positive	% Thymol-positive
Malaria	35	94	80
Rheumatoid arthritis	34	76	38
Heart failure	28	39	36
Glandular fever	19	95	58
Subacute bacterial endocarditis	7	100	86

represents the admissions of the relevant types of illness to Ashford (formerly Staines) County Hospital during the last two years. In addition to these, 42 further cases shown in Table II were used as controls to exclude fever and joint

TABLE II.—*42 Control Cases*

Diagnosis	No. of Cases	No. Gold-positive	No. Thymol-positive
Pulmonary tuberculosis ..	18	1	1
Acute articular rheumatism ..	8	0	0
Infective arthritis	6	3	0
Osteo-arthritis	10	0	0

changes as possible contributing factors. The results in these control cases were mainly negative, the only positive reactors being one patient with pulmonary tuberculosis (gold, 3+; thymol, 7 units) and three with infective arthritis (all gold 1+, thymol-negative). It would appear, therefore, that the positive results recorded below are not directly related to pyrexia or joint involvement.

Results

The results will be discussed under five headings.

1. *Congestive Cardiac Failure.*—Twenty-eight consecutive cases of marked congestive failure with gross oedema and hepatic enlargement were examined. The ages of the patients were from 25 to 70 years, and the aetiology of the failure was: rheumatic carditis, 10; arteriosclerotic hypertension, 11; coronary thrombosis, 3; pulmonary disease, 4. The results of the investigation are shown in Table III. Analysis of these

TABLE III.—*Congestive Cardiac Failure (28 Cases)*

Thymol Units	Gold Test						
	0	1+	2+	3+	4+	5+	Totals
0–4 ..	17	0	0	0	1	0	18
5–7 ..	0	2	1	4	0	2	9
8–15 ..	0	0	0	0	0	1	1
Totals ..	17	2	1	4	1	3	28

39% gold-positive; 36% thymol-positive.

results showed no significant correlation between positive findings and size of liver, length of history, or aetiology of the failure. The only suggestive finding was in regard to prognosis, as death occurred in all the 8 markedly positive cases within four months, compared with 4 deaths out of the 17 negative cases in the same period. In 15 cases the urine was tested for urobilin, which was present in 8. All with positive flocculation reactions had urobilinuria, and it was present in 5 of those with negative reactions. The presence of urobilinuria therefore appears to be a more sensitive test of liver function in this condition. Of the two flocculation tests used, the gold and thymol seemed equally sensitive, being positive in 39% and 36% of cases respectively.

2. *Malaria.*—Thirty-five consecutive cases of relapsing benign tertian malaria in young soldiers were investigated. The diagnosis was confirmed in every case by the finding of *Plasmodium vivax* in the blood smear. The results are shown in Table IV. A very high proportion gave positive results, the gold being rather more sensitive than the thymol (94% and 80% respectively). Urobilinuria was present in 20 out of the 21

cases in which the test was carried out, but may well have been due in part to accompanying haemolysis. The temporary nature of the disturbance in this condition was shown by the repetition of the tests in 7 cases, in which a return to normal or nearly normal results was found after three weeks' treatment.

TABLE IV.—*Malaria (35 Cases)*

Thymol Units	Gold Test						
	0	1+	2+	3+	4+	5+	Totals
0–4 ..	2	2	0	3	0	0	7
5–7 ..	0	2	5	4	4	0	15
8–15 ..	0	0	1	2	7	3	13
Totals ..	2	4	6	9	11	3	35

94% gold-positive; 80% thymol-positive.

3. *Glandular Fever.*—Nineteen cases of this condition were investigated, and the diagnosis was based in every instance on the clinical picture, the presence of abnormal mononuclear cells in the circulating blood, and a positive Paul-Bunnell reaction in a dilution of at least 1 in 64. The results are shown in Table V, where they are arranged in order of descending

TABLE V.—*Glandular Fever (19 Cases)*

Paul-Bunnell Titre	Thymol Units	Gold Test	Total Leucocytes per c.mm.	Atypical Mononuclears per c.mm.
2,048	14	5+	22,000	8,200
1,024	16	5+	15,000	5,200
1,024	16	3+	9,400	4,300
512	13	5+	14,800	5,400
256	12	3+	11,000	4,000
256	6	2+	15,000	3,200
256	5	2+	9,400	3,800
128	16	3+	13,600	4,100
128	7	4+	14,000	4,200
128	3	1+	9,000	700
128	5	2+	15,000	3,000
128	2	0	5,000	400
64	8	1+	17,000	1,400
64	2	1+	12,000	870
64	1	2+	9,000	280
64	4	1+	8,400	560
64	1	1+	13,000	900
64	2	1+	4,000	400
64	1	1+	7,000	950

95% gold-positive; 58% thymol-positive.

Paul-Bunnell titres. The thymol and gold reactions were both markedly positive in all the cases with high Paul-Bunnell readings and with an atypical mononuclear count of over 4,000. Urobilinuria was present in only one case, which was also clinically jaundiced.

This patient showed a very interesting correlation between clinical course and biochemical tests. She was an A.T.S. girl, aged 25, who came into hospital jaundiced and was thought at first to be a case of infective hepatitis with splenomegaly. Very few cervical glands were palpable and none elsewhere. Her blood count showed 15,000 leucocytes with 3,200 abnormal mononuclears, and the Paul-Bunnell test was positive in a dilution of 1 in 256. The liver function tests showed a thymol of 6 units, a colloidal gold of 2+, and a serum alkaline phosphatase of 25, with 6 units (Watson) of urobilin in the urine—results typical of infective jaundice. Her jaundice improved, but a week later axillary and inguinal glands became palpable and tender, her jaundice deepened once more, and the character of the reactions changed. The thymol was now 5 units, colloidal gold 0, and phosphatase 46, and urobilin was absent from the urine—results typical of obstructive jaundice. Recovery ensued. The course of the illness, correlated with the biochemical findings, suggests that the mechanism of jaundice in this condition may vary.

Thus Davis *et al.* (1945) have recently described, in necropsy material from a typical case of glandular fever, liver changes indistinguishable from those of infective hepatitis, and one of us has suggested that jaundice could occur in this condition from obstruction to the common bile duct by glandular enlargement in the porta hepatis (Carter, 1942). In the present case the initial jaundice was probably infective in origin and the exacerbation obstructive.

Taking the group as a whole, it appears that the flocculation tests are closely correlated with the abnormal mononuclear count and the Paul-Bunnell test in glandular fever.

4. *Subacute Bacterial Endocarditis.*—Seven proved cases of this condition, with a typical clinical picture, previous valvular damage, embolic phenomena, and positive blood culture, were investigated. In addition, 5 other cases were examined in which the condition was suspected because of fever and evidence of endocarditis, although a negative blood culture persisted without embolic phenomena. In these 5 cases the diagnosis was eventually abandoned. The results are shown in Table VI. The

TABLE VI.—*Subacute Bacterial Endocarditis (7 Cases)*

	7 Proved Cases							5 Suspected Cases Subsequently Disproved				
Gold test ..	5+	5+	5+	5+	4+	3+	3+	1+	0	0	0	0
Thymol units ..	8	6	5	6	5	4	5	4	3	3	4	2

Of proved cases 100% were gold-positive and 86% thymol-positive.

almost uniformly positive results in the proved cases are striking in spite of their small number. Urobilinuria was present in only 2 out of these 7 cases. As a positive blood culture is not always easy to obtain quickly, the flocculation tests may have some diagnostic value in this condition and allow of treatment at the earliest opportunity. In the 5 negative suspected cases the tests were of considerable help, as illustrated by the following:

A man aged 30, with a rheumatic history, was admitted with irregular pyrexia, microcytic anaemia, tachycardia, and the signs of a mitral stenosis. He developed haematuria of a mild but persistent nature, a rising blood urea, and albuminuria without oedema. This condition subsided, and was followed by auricular fibrillation of paroxysmal type. The fever persisted and a cerebral embolism occurred. A confident diagnosis of bacterial endocarditis would have been clinically justified, but flocculation tests and blood culture remained negative. The patient slowly recovered with salicylates and iron, and was well eighteen months later except for his valvular defect, presumably having had a severe reactivation of his previous rheumatism. In one of the proved cases the patient appears to have recovered a year after his first treatment with penicillin, and there has been an interesting change in his flocculation reactions:

Mar. 13, 1945 ..... Thymol, 6 ; Gold, 5+
April 31, 1945 ..... Thymol, 5 ; Gold, 5+
June 30, 1945 ..... Thymol, 3 ; Gold, 1+
Oct. 30, 1945 ..... Thymol, 2 ; Gold, 0
Jan. 6, 1946 ..... Thymol, 2 ; Gold, 0

A comparison between the gold and thymol tests in the group shows a considerable difference in degree of sensitivity in favour of the gold, although the thymol reaction was just positive in 6 out of the 7 cases with positive gold reactions.

5. *Rheumatoid Type of Polyarthritis.*—This series consisted of 34 patients (30 women) who showed an atrophic type of polyarthritis ranging from the classical rheumatoid arthritis to a mild, fleeting, periarticular, inflammatory reaction with minimal radiological changes. The results are shown in Table VII. In

TABLE VII.—*Rheumatoid Arthritis (34 Cases)*

Thymol Units	Gold Test						
	0	1+	2+	3+	4+	5+	Totals
0–4	8	5	2	4	1	1	21
5–7	0	2	2	1	3	0	8
8–15	0	0	0	0	1	4	5
Totals ..	8	7	4	5	5	5	34

76% gold-positive; 38% thymol-positive.

the whole group there was a marked difference between the gold test (76% positive) and the thymol test (38% positive). Urobilinuria was present in only 1 out of 19 cases tested. The series divides itself up into four classes:

(1) The very advanced long-standing typical rheumatoid arthritis with permanent deformity and gross generalized radiological changes. There were 4 of these, all with markedly positive colloidal gold reactions and very little change in the thymol turbidity test.

(2) The active classical rheumatoid arthritis, with involvement of wrists, fingers, knees, and feet, with spindling of fingers, atrophic radiological changes, and raised erythrocyte sedimentation rate. There were 16 in this group, with 1 man among them, and 4 of the cases showed Felty's syndrome with generalized superficial lymphatic glandular enlargement and splenomegaly; 11 of these had a markedly positive colloidal gold reaction, 3 were weakly positive, and 2 were negative.

(3) Ten cases with a history of fibrositic pains, occasional peripheral joint swellings, a minimal degree of finger-spindling, and some general osteoporosis around the affected joints, but no other joint changes. The sedimentation rate was raised in all, and a diagnosis of probable early rheumatoid arthritis was made. All these patients were between 20 and 30 years of age. Two showed a spondylitis with stiffness and pain, but no changes in radiological appearances of spinal or sacro-iliac joints. Two were associated with thyrotoxicosis. The colloidal-gold findings were: 1 markedly positive (3+), 1 positive (2+), and 8 weakly positive (1+).

(4) Four cases with atypical findings, usually fleeting joint pains and swellings, without spindling, with raised sedimentation rates, and radiological changes showing only a minimal bone rarefaction. All these had negative gold and thymol reactions.

In the whole group there was a rough though definite correlation between the gold test and the sedimentation rate, as shown in the accompanying Chart. It will be seen from this

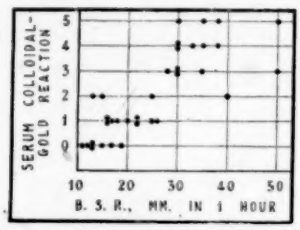

Chart showing the correlation between the serum colloidal-gold reaction and the sedimentation rate in 34 cases of rheumatoid arthritis

that all cases with 3+, 4+, or 5+ gold reaction had sedimentation rates over 25 mm. in 1 hour and that all cases with a negative gold reaction had rates below 20 mm.

Taking the rheumatoid group as a whole, it will be seen that the gold test was positive in 28 out of 30 cases in which the diagnosis was well established. The thymol test was much less sensitive, being positive in only 13 of these 30 cases. Urobilinuria was almost uniformly absent (18 out of 19 cases).

Discussion

The results as a whole may be considered under three headings.

1. *Heart Failure.*—In this group the positive results are readily explicable on the basis of chronic passive congestion of the liver, and probably are mainly a reflection of this process. With the gold and thymol tests the proportion showing abnormal findings was nearly identical and was similar to that found with other tests by Chávez *et al.* (1943). The presence of urobilinuria in all the positive reactors serves as confirmation of the presence of liver dysfunction in these cases.

2. *Rheumatoid Arthritis.*—The balance of probability here is that the high proportion of positive results is not specifically related to liver pathology, since there was no urobilinuria and the published evidence of liver damage in this disease does not suggest such a degree of dysfunction as would explain the findings. It is possible that an antibody associated with the serum gamma-globulin fraction may be responsible for the flocculating power of patients with rheumatoid arthritis. It is noteworthy that there was a wide discrepancy between the two tests in this group (gold, 76% positive; thymol, 38% positive).

3. *Malaria, Glandular Fever, Infective Endocarditis.*—These conditions form an intermediate group in which there is some supporting evidence of liver disease, but in which it is doubtful whether this explains all the findings. Thus urobilinuria was constantly present in malaria, but may have been partly due to haemolysis; it was mainly absent in glandular fever and inconstant in infective endocarditis. There is histological evidence of hepatitis in malaria and in glandular fever (Lichtman, 1942; Davis *et al.*, 1945), and the latter is known to cause jaundice in a small proportion of cases. However, this jaundice may sometimes be due to enlarged glands in the portal fissure, as suggested by one of us (Carter, 1942) and as illustrated in the case above. In these three conditions the correlation between the tests also occupies an intermediate position (gold, 95% positive; thymol, 74% positive), being less close than in diseases with known liver damage, such as infective hepatitis (Maclagan, 1944b). It seems a reasonable inference that in these three diseases both liver dysfunction and antibody formation contribute to the results, no doubt in varying degrees in different patients.

Conclusion

In conclusion it may be stated that, while these flocculation tests have proved of great value in the investigation of primary diseases of the liver, positive results do certainly occur in certain conditions not usually regarded as liver diseases. This applies particularly to the gold test, the thymol test being rather more specifically related to liver pathology. Diseases such as heart failure, glandular fever, malaria, infective endocarditis, and rheumatoid arthritis must therefore be considered as possible alternative diagnoses in patients with suspected primary liver damage who have positive flocculation tests. Viewed from another angle, we have had some diagnostic help from the tests, particularly the gold test, in rheumatoid arthritis, glandular fever, infective endocarditis, and malaria. Negative results are unusual in these conditions and positive ones of some confirmatory value. The tests may possibly have some prognostic significance in heart failure.

Summary

The serum colloidal-gold test and the thymol turbidity test have been performed in 35 cases of malaria, 34 of rheumatoid arthritis, 28 of congestive cardiac failure, 19 of glandular fever, and 7 of subacute bacterial endocarditis.

Some positive results occurred in each group, the proportion varying from 95% to 39% for the gold test, and from 80% to 36% for the thymol test. The two tests were equally sensitive in heart failure, but the gold test was more sensitive in other conditions, the difference being particularly great in rheumatoid arthritis.

In glandular fever there was a positive correlation between the gold test, the Paul-Bunnell test, and the abnormal mononuclear counts. In rheumatoid arthritis the gold test and the erythrocyte sedimentation rate were positively correlated.

The positive finding in heart failure probably resulted from chronic passive congestion of the liver. In the other conditions both liver damage and antibody formation may have contributed to the results.

The flocculation tests are not purely liver function tests, as they probably depend upon changes in the serum gamma-globulin fraction. They have proved of value as diagnostic aids both in primary liver diseases and in some of the above conditions, but the possibility of occasional interference between the two groups must be considered in interpreting the results.

We are much indebted to Dr. A. G. Signy for the haematological data and Paul-Bunnell tests. Part of the expenses of the work was defrayed by a grant to one of us (N. F. M.) from Westminster Hospital.

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The Scottish National Blood Transfusion Association states in its annual report that during the first three months of 1946 hospitals' demands for blood exceeded the amount given by volunteers. Requirements were met only by drawing on accumulated wartime reserves which it had not been necessary to expend during the war. As long as the war was on, an adequate number of volunteers were always ready to come forward to give blood. For peacetime conditions considerably more organized recruitment and propaganda will be necessary if the Association is to meet its commitments to the hospital services.

RHEUMATIC FEVER IN THE R.A.F.

RESULTS OF TREATMENT AT A CONVALESCENT CENTRE

BY

H. STUART BARBER, M.D., F.R.C.P.I.

Late Wing Commander; Officer in Charge of a Medical Division

In a comparatively recent survey of the trends in the incidence of rheumatic fever Glover (1943) presented figures showing a remarkable decline in the disease since the beginning of the century, to the extent of inducing him to refer to it as an "obsolescent" disease. Nevertheless, in large communities of young adults such as are to be found under conditions of military service rheumatic fever still provides a problem of some magnitude. Before the late war the frequency of the disease among the boys and youths in the training establishments of the Royal Navy and in the apprentice schools of the Royal Air Force had been a matter of concern to the respective medical directorates. In the Air Force the boys enter the apprentice schools at the age of 15 to 16 years, to undergo an expensive course of training lasting three years. Applications to enter the schools have always exceeded the number of vacancies, and the boys are selected by a competitive examination. In consequence of rheumatic fever not only was there a steady and persistent loss of potential craftsmen upon whom a considerable amount of public money had been spent, but in many cases a promising career was ruined. While a certain wastage was to be expected, it was felt that if these cases could be given the necessarily protracted convalescence under Air Force auspices a high proportion might again become fit for service. Shortly after the outbreak of war it was therefore proposed to establish a convalescent centre for cases of rheumatic fever, and early in 1940 some twenty beds were set aside for this purpose in one of the Royal Air Force general hospitals. To ensure that only those cases which would benefit from such treatment were admitted, all patients had to be recommended for transfer by one of the Air Force consultants in medicine. A few acute cases were admitted direct from neighbouring units served by the hospital. It was soon found necessary to increase the number of beds at the centre, as, in addition to the apprentices, convalescent cases from among the regular Air Force personnel came to be included. Towards the close of 1940 it was decided to move the centre to another hospital, where it continued for a further nine months. Both because of a greater number of beds and because the demands upon the consultants in medicine did not permit of their making individual recommendations, patients suffering from various forms of chronic rheumatism were also treated.

The principal consideration in the treatment was an adequate period of rest followed by a graduated return to activity as the condition, gauged by the temperature, pulse rate, and erythrocyte sedimentation rate, showed improvement. The sedimentation rate was taken at weekly intervals, and when there was a doubt regarding the size and configuration of the heart this was checked radiologically. An electrocardiograph was not available for use in all R.A.F. hospitals in the early years of the war, and it was not possible to make serial tracings. As soon as the rate of progress permitted, occupational therapy was encouraged. No complications were encountered, and, despite occasional retrogression after infections of the upper respiratory tract, no true relapses occurred.

The system of medical records in the Air Force makes a follow-up of such patients a relatively easy matter. In 1945, four years after the centre had closed, in view of the interest concerning the ultimate progress of these cases and to make some assessment of the value of the centre, such a follow-up was initiated. Sixty-five airmen convalescent from acute rheumatic fever had been treated. The majority were in their teens, and the average period of detention in hospital was 149 days. Of the original number admitted it was considered advisable to invalid eight out of the Service, of whom four had developed mitral stenosis and four aortic incompetence. The remaining 57 were retained in the Service, but owing to errors in numbers or names it was found possible to trace only 48 of these. At the time of their return to duty 28 showed signs of minor cardiac involvement by soft apical or basal systolic murmurs. The remainder appeared to be fully recovered. On returning to duty all were lowered in medical category, and were subject to three-monthly examination by a medical specialist until they were considered fit to return to a full category. When the medical documents were seen in 1945 it was found that out of 48 men 34 had been recategorized to Grade 1, and of these two had been accepted for air-crew duties, in which the physical standards are extremely high. Ten men had been retained in Grade 3, and four had been invalided out of the Service—two on account of mitral stenosis and two because of aortic incompetence. The after-history of these men disclosed little of interest, with one exception. Four patients developed symptoms of a psychoneurotic nature and were noted at later examinations to have a nervous tachycardia or effort syndrome. An incidence of from 6 to 8% showing such symptoms seems unduly high, and gives rise to some doubt regarding the wisdom of frequent examinations. A similar state of affairs was observed in some of another group of patients coming for three-monthly review of their chests because of the finding of opacities of doubtful significance on mass radiography. In suspected phthisis, and after diseases like rheumatic fever, it is a difficult matter to strike a nice balance between adequate observation and the liability of inducing a neurosis by too much attention to the chest or heart. In defence it may be argued that the seed flourishes only in fertile ground, that at a later date the psychoneurosis would have manifested itself in other ways for other reasons, and that the advantages of adequate after-care outweigh such possible complications. In this connexion it is of interest to refer to a study made on the cases of chronic "rheumatism" admitted to the centre in the later stages (Flind and Barber, 1945). It was found that a high percentage were suffering from one or another of the common neuroses and had shown a clear predisposition to neurosis from an early age. In an attempt to obtain a control group a psychiatric assessment was also made on some of the convalescent rheumatic fever patients. Unfortunately the decision to terminate the rheumatic centre, and a marked decrease in the number of these patients, made this group from a statistical point of view valueless, but in the 15 patients studied no evidence of a psychoneurosis was found. The only other point of interest is the small number who had a further attack of rheumatic fever. Only two were again treated in hospital on this account.

The majority of observers are agreed that rheumatic fever is closely related to infections of the upper respiratory tract, in particular by the haemolytic streptococcus. How this association plays its part in the onset of the attack of rheumatic fever is not clear, but, despite the strictures of Aschoff (1935) regarding an allergic factor, there is a distinct tendency to view at least the joint manifestations as being of this nature. To some extent this hypothesis is supported by the occasional appearance of joint involvement similar in most respects to that of rheumatic fever in poliomyelitis (Poynton, 1943) and in tuberculosis (Sheldon, 1946). On the other hand, the heart lesions would seem to be due to a direct infection of the valves by the haemolytic streptococcus; for Green (1939), Collis (1939), and Thomson and Innes (1940) reported success in culturing these organisms from the heart valves in about half their necropsies on cases of rheumatic fever dying in the acute phase. The importance of infections of the upper respiratory tract was stressed by Bradley (1934), who considers that the precursor pharyngitis is an essential part of the rheumatic state, though it may be concealed under the guise of the common cold. In a later communication Bradley (1938) remarks that the spread of infection is intensified by the simultaneous presence or previous occurrence of other catarrhal diseases. Similarly, Green (1942) states that the increase of acute rheumatic fever in winter is due to the prevalence of respiratory infections and not to any climatic influence by itself. He suggests an enhanced virulence of the infecting organism as a result of passage through a community. Recently Glover (1946) has again emphasized this. At the appropriate season the carrier rate of one particular strain of streptococcus rises and is followed by an epidemic of acute tonsillitis and a little later by cases of acute rheumatism in the ratio of about one to every ten of acute tonsillitis. The question of susceptibility of certain classes of the population, particularly in the lower-income groups, is also thought to be of importance. Green (1942), in observations on epidemics in the training establishments of the

Royal Navy, noted a higher incidence among boys coming from Tyneside, at that time designated a "distressed area." Poynton (1938), however, remarks that the apparently higher incidence among the poorer classes compared with the well-to-do may be a matter of relative numbers, and that the percentage incidence is probably the same. This is not a view generally held, and Keith (1941) mentions the economic status as one of the fundamental causes, while Glover (1943) ascribes the war-time decrease of acute rheumatism to abundant employment and the greatly increased provision of school milk and meals for the children. It should be possible to elucidate this important point, though it is not unreasonable to suggest that overcrowding, poor hygiene, and inadequate diet will at least predispose to upper respiratory infections and, in susceptible individuals, to subsequent rheumatic fever. Under Service conditions, however, the hygiene and diet are of a high order, even if overcrowding takes place at times. In peacetime overcrowding did not take place in the R.A.F. apprentice schools, where spacing in the barracks was carefully controlled. In these centres the important factors would appear to be a community of young adults undergoing military training, with its stress on hardihood in all kinds of climatic conditions, plus a constant addition of new arrivals susceptible to strains of the infecting organism, against which the older members have gained an immunity.

At the time of the inception of the rheumatic centre the full importance of the precursive upper respiratory infection was not realized and consequently no inquiry into this was made. When the medical documents were examined in 1945 a note was made of any containing an entry for tonsillitis or nasopharyngitis. In 14 of the 48 cases traced there was recorded an admission to either the sick quarters or the hospital for an upper respiratory infection within four weeks before the onset of the rheumatic symptoms. Of these, four were diagnosed as tonsillitis and ten as nasopharyngitis. The interval between the two illnesses varied from five to eighteen days. The only entries recorded in the medical history are admissions to hospital exceeding 48 hours in duration, specialist reports, and medical boards. It can therefore be safely assumed that a certain proportion of the remainder also had milder infections of this nature, for which they may have reported sick but were not ill enough to require admission to hospital.

The incidence of rheumatic fever in the Royal Air Force as a whole in 1940 was 2.1 per 1,000, whereas among the boy entrants and apprentices it was 10.4 per 1,000 for the same period. In one epidemic in a Naval training establishment the attack rate was 63 per 1,000 (Green, 1942). It is therefore of paramount importance that adequate methods of prevention should be instituted. In the armed Forces of the United States one suggested solution was the rejection of all recruits giving a past history of rheumatic fever (Master, 1943, 1944; Holbrook, 1944). This measure would hardly suffice, for among the 65 patients treated in the R.A.F. rheumatic centre only two gave a past history of rheumatic fever, and in one of these that attack had occurred in the Service. The apprentices, too, are of an age when primary attacks may be expected. Tonsillectomy is regarded as being of no value (Keith, 1941), and Bradley (1932) goes so far as to describe it as a lost cause in the prevention of rheumatic fever. A way of preventing the precursive respiratory infections seemed a more hopeful alternative, and the sulphonamides offered a possible means to this end. Accordingly, at camps of the United States Army and Navy large-scale observations were made on the value of the prophylactic use of the sulphonamide compounds in the prevention of such infections and on the effect of the prevention on the incidence of rheumatic fever. The results came fully up to expectations. In the Army Air Force there was a reduction of 50 to 70% in the incidence of respiratory and streptococcal infections after the prophylactic administration of from 0.5 to 2 g. of sulphadiazine daily to each man (Holbrook, 1944). It was found that a reduction in the attack rate of acute rheumatic fever ran parallel with the reduction in respiratory diseases. A similar finding was reported by Coburn (1944) after the use of sulphonamides in the United States Navy. A small percentage of the men showed an idiosyncrasy to sulphonamides in prophylactic doses, but as the incidence was 1 in 10,000 it was concluded that the advantages far outweighed any risk entailed. There was no evidence either of the development of sulphadiazine-resistant strains of bacteria or of mass sensitivity to the drug on the part of the subjects of the experiment. These findings suggest a promising form of defence against rheumatic fever, and might with advantage be given a trial in some of the British training centres. From the results obtained with the rheumatic centre it may be considered that it justified its existence, and that in the event of further outbreaks of rheumatic fever it might be revived.

Summary

A centre for convalescent cases of rheumatic fever in the Royal Air Force, and the results of treatment at the centre, are described.

The relationship between the upper respiratory tract infections and rheumatic fever, with a method of prophylaxis tried in the armed Forces of the United States, is discussed.

I wish to acknowledge the constant interest shown in the centre by the Royal Air Force Consultants in Medicine, Air Vice-Marshal A. F. Rook and Air Vice-Marshal J. J. Conybeare, and the assistance in tracing the patients after their discharge from the centre given by the Air Officer in Charge of Royal Air Force Records.

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ERYTHROBLASTOSIS FOETALIS

BY

MARGARET VENTERS, M.B., Ch.B., M.R.C.O.G., M.M.S.A., L.M.

Erythroblastosis foetalis is not an exceedingly rare disease, but it appears to be uncommon enough to make the following case worth recording.

Case Report

Mrs. E., aged 33, was first seen in December, 1944, when she was 23 weeks pregnant. This was her sixth pregnancy, and she had no living child. Her obstetric history was as follows:

First Pregnancy, 1934.—Full term. Normal confinement and delivery. Child died from pneumonia when 9 months old.

Second Pregnancy, 1936.—Full term. Normal confinement and delivery. Mother told that the child was jaundiced at birth; it died nine days later.

Third Pregnancy, 1937.—Patient had eclampsia. Child stillborn.

Fourth Pregnancy, 1940.—Patient admitted to hospital three weeks before term with oedema of feet, which subsided within 24 hours of admission. She was told that she had no rise of blood pressure and that her urine was normal, but she was kept in hospital in view of her previous history. Foetal movements ceased two weeks later for no apparent reason, and she was delivered at term of a stillborn macerated foetus.

Fifth Pregnancy, 1943.—Aborted at three months.

The patient was a healthy well-nourished woman; her Wassermann reaction was negative. It was thought most probable that her second child had died of erythroblastosis, but her blood was not tested for the Rh factor owing to some difficulty in getting the test done at that time. The antenatal period was uneventful. It was decided to induce labour at 38 weeks, or earlier if any signs of toxaemia developed, and with this in view she was given stilboestrol dipropionate daily from 36 weeks onwards. The patient went into labour on the morning of the day on which she was to have come into hospital for induction, and had a rapid, almost precipitate, delivery. When the membranes ruptured it was noticed that the liquor was of a dirty brown colour. The child was slightly premature in appearance, weighed 6 lb. 6 oz. (2.9 kg.), and was slightly jaundiced, but his general condition was quite good. Six hours after delivery the jaundice was considerably deeper; the child was very fretful and did not appear to be at all well. As his condition was

thought to be partly due to the rapid delivery, he was given an injection of vitamin K and small doses of potassium bromide with chloral. The next day the child was deeply jaundiced, but he was no longer fretful and seemed much better. For the next two days there was very little change and he took his feeds well. After that the jaundice gradually grew less and by the tenth day it had completely gone, but he was very pale and lethargic, and took his feeds with difficulty. Two days later he started to improve, and was discharged when three weeks old, doing very well. When last seen at 8 months of age he was a normal healthy well-developed child. While in hospital he was partly breast- and partly bottle-fed, breast milk being given when it was available, the mother herself having practically none; by the time he left hospital he was being artificially fed. Small doses of iron (mist. ferri et ammon. cit.) were started on the twelfth day and gradually increased, and as soon as it could be obtained the child was given a dried-milk food containing extra iron, as this was easiest for the mother.

Both parents and the child were tested for the Rh factor when he was 6 months old, and the report was as follows: Father: Blood group O Rh-positive; genotype R_1R_1. Mother: Blood group O Rh-negative; the serum contained an "incomplete antibody" as described by Race and Taylor. Child: Blood group O Rh-positive; genotype R_1r. A note was added by the pathologist that these findings confirmed the clinical diagnosis of erythroblastosis foetalis.

Discussion

Erythroblastosis foetalis is a hereditary disease of the newborn, characterized by anaemia, severe jaundice evident at birth or appearing shortly afterwards, and oedema, with enlargement of liver and spleen, leucocytosis, and erythroblastosis. It is primarily an acute haemolytic anaemia (Damshek *et al.*, 1943), the other pathological changes being subsequent to the haemolytic process. The disease, however, may vary in intensity, the mildest cases being those in which anaemia alone is present, and the most severe those in which there is generalized oedema. The condition is due to immunization of the mother with some factor present in the foetal blood, and this in about 90% of the cases is the Rh factor, the father and child being Rh-positive and the mother Rh-negative. The theory of immunization of the mother by foetal erythrocytes, with the production of antibodies which subsequently cause intra-uterine haemolysis of the foetal blood, was first suggested by Ottenburg in 1923, and in 1940 Landsteiner and Wiener first demonstrated the Rh agglutinogen in the red cells of about 85% of the people tested. This figure has been confirmed by Cappell (1944) and Plaut, Barrow, and Abbott (1945). Levine, Katzin, and Burnham in 1940 found an atypical agglutinin in the serum of several patients who had given birth to infants suffering from erythroblastosis, and these antibodies corresponded in activity to the anti-Rh agglutinins produced by Landsteiner and Wiener in animals. The Rh factor, which depends upon a complex of antigens borne in the red cells, is inherited as a simple Mendelian dominant (Landsteiner and Wiener), and the theory of the mode of production is as follows.

The Rh-positive father transmits the Rh factor to the foetus. The Rh antigen of the foetus passes through the placenta into the mother's circulation. Her blood, which is Rh-negative, reacts to the antigen by building up antibodies against it—the anti-Rh agglutinins. These in their turn pass through the placenta into the foetal circulation and there agglutinate the Rh-positive cells. Haemolysis of the foetal blood and haemolytic changes ensue, followed by other pathological changes, the most important of these being damage of the liver parenchyma. In about 10% of the cases the immunizing agent is not the Rh factor, and in some of those cases the disease is thought to be due to immunization of a group O mother by the group A or B blood factor. Six such cases are reported by Polayes (1945). The disease does not usually develop with a first pregnancy, but as a rule shows itself in a second or in later pregnancies, the theory being that it may take more than one pregnancy to develop sufficient antibodies in the mother's blood to act on the foetal blood.

It has been shown that mothers of infants with erythroblastosis show a high incidence of abortions, miscarriages, stillbirths, and toxaemias (Levine *et al.*, 1941; Polayes, 1945). The main disease concerned in the differential diagnosis is congenital syphilis, in which the clinical findings may be almost identical. The other diseases that have to be excluded are antenatal infection, post-natal infection, congenital malformation of the bile ducts, haemorrhagic disease of the newborn, congenital heart disease, and icterus neonatorum. The previous history (if any), the clinical findings, and the presence of anti-Rh agglutinins in the blood of a Rh-negative mother make the diagnosis as a rule fairly easy, but difficulties do arise. Occasional mild cases may be missed either through not being observed or through being wrongly diagnosed. Also, the finding of anti-Rh agglutinins in the blood of a Rh-negative mother, though almost pathognomonic of the disease, is not absolutely so, as cases have been observed in which the anti-Rh agglutinins were found in the blood of the mother but the child was normal. Again, the absence of anti-Rh agglutinins does not exclude the disease. As stated before, about 10% of the cases reported are not due to immunization of the mother by the Rh factor; and in other cases, though the mother may be Rh-negative, no anti-Rh agglutinins may be found. Davidsohn (1945) states that the best time to test for the anti-Rh agglutinins is not immediately after delivery but about ten days later. Race and Taylor (1944) have described a method by which an "incomplete antibody" can be found in some cases in which the mother is Rh-negative and erythroblastosis is suspected but in which no antibody can be detected by ordinary means. The anti-Rh agglutinins may be found in the blood of the mother up to two years after delivery. It is interesting to note that the disease does not necessarily become more severe with each succeeding pregnancy, but may vary in intensity; and Davidsohn (1945) points out that there is some evidence to show that no direct relation exists between the antibodies in the mothers' blood and the severity of the disease in the baby.

The only efficient treatment in severe cases is blood transfusion, and it has been found that transfusion with Rh-negative blood is more effective than transfusion with Rh-positive blood, possibly because the Rh-positive blood of the infant is undergoing destruction (Levine *et al.*, 1941).

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ACHROMOTRICHIA IN TROPICAL MALNUTRITION

BY

WILLIAM HUGHES, M.D., M.R.C.P.

(*Colonial Medical Service*)

Depigmentation of the skin is one of the most striking results of malnutrition as it is seen in young Africans. This phenomenon has fixed the attention of native as well as European (Williams, 1933; Gillan, 1934; Trolli, 1938; Trowell, 1941) observers, and many of the names under which the prevailing syndrome of malnutrition has been described—kwashiorkor, cheveux blancs, etc.—signify depigmentation of the skin or its appendages. From what we now know of the diet consumed by the patients and the response to treatment we can refer the depigmentation to deficiency of one or more members of the Vitamin B_2 complex. Carrying the analysis a little further, I have tried to show (Hughes, 1946) that kwashiorkor—the most widely prevalent syndrome of deficiency with depigmentation—is associated primarily with a deficiency of riboflavin. There are, however, certain cases of depigmentation in which achromotrichia is a most striking feature while the clinical signs of ariboflavinosis are minimal or absent.

In a study of malnutrition in Lagos during the past four years I found the incidence of achromotrichia widespread, and the first impression was that it was constantly associated with depigmentation of the skin. Further investigation, however, revealed: (i) In acute recent cases of kwashiorkor

depigmentation of the skin may be intense while the hair still retains its colour. Alopecia of a "moth-eaten" type is constant. (ii) In chronic cases of kwashiorkor, achromotrichia and alopecia run parallel with depigmentation of the skin. (iii) Among the remaining cases, which constitute a large group, we identified eleven cases of what appears to be a separate syndrome in which achromotrichia is the most prominent feature. In these cases the moth-eaten alopecia of kwashiorkor was not seen, signs of ariboflavinosis were minimal or absent, and, furthermore, the mechanism of depigmentation appeared to be different from that which operates in kwashiorkor.

To appreciate the difference between kwashiorkor and the syndrome of nutritional achromotrichia, about to be described, it will be necessary to recount briefly the main epithelial changes of the former, with particular emphasis on the pigmentary changes which can be ascribed to ariboflavinosis.

Depigmentation in Kwashiorkor

The symptomatology and lesions of kwashiorkor have been described by the authors to whose work reference has been made above. The epithelial changes fall into two groups:

(*a*) *Those Associated with Ariboflavinosis as seen in the Adult.*—(1) *Glossitis:*—The superficial epithelium is shed, revealing a pink or magenta tongue, without fissuring and without great enlargement of the papillae. (2) *Desquamation* about the lips, angles of the mouth, naso-labial sulci, eyes and ears, and external genitals. The rash consists of *hyperpigmented scales on a hypopigmented background.* Compared with the adult ariboflavinotic syndrome the exfoliation is more extensive. The rash extends from the oral lesions on to the face and neck and from the perineal lesions on to the thighs, buttocks, and abdomen and is more intensive; and fissures and erosions are common, especially about the mouth, flexures, and perineum.

(*b*) *Desquamation and Alopecia not seen in Adult Ariboflavinosis.*—(1) There is intense exfoliation on the dorsa of the hands and feet, and the rash may extend up to the shoulders and thighs respectively. (2) In recent acute cases the hair is loose and can be drawn out painlessly in large bunches. At this stage, however, it should be noted that the colour is still a normal dark brown and the texture coarse. In chronic cases the hair comes up fine, straight, pale, and sparse.

Histologically, the changes everywhere are those of parakeratosis. In the skin there is a thinning out of the epidermis, and nucleated cells containing pigment can be seen in the stratum corneum, which is partly detached. Sections of the scalp reveal, in addition, large oval spaces lined with epithelium, indicating the sites from which the superficial row of hairs have been shed. It is reasonable to assume that the process of hyperkeratosis accounts for the alopecia and depigmentation, the continual loss of cells and pigment creating demands which the normal resources of the epithelium cannot supply.

Primary Nutritional Achromotrichia

In the syndrome about to be described the most striking finding is achromotrichia. The clinical picture abstracted from eleven cases might be set down as follows.

The patients were of either sex—seven females, four males—between the ages of 4 and 10 years. The environment and previous history were similar to those which obtain in kwashiorkor. There was a history of diarrhoea in nine cases, in one of which *E. histolytica* was isolated from the stools. Malaria parasites—all *P. falciparum*—were found in routine slides in nine cases, but, as treatment was given only when indicated by fever, it was shown that recovery could occur in spite of this infection. Similarly, hookworm and roundworm infections, although heavy in some instances, were shown not to be the deciding aetiological factors. No exact quantitative studies have yet been made on the diet consumed by this type of patient. Qualitatively, cassava is the staple, but small quantities of cereals—rice, maize, and wheat flour—are also taken. Many ingredients, including green leaves, peppers, and variable amounts of fermented foods, go into the "soup." Of the more important ingredients—meat and fish—probably less than 1/2 oz. (14 g.) daily reaches any one child. Milk is scarce, and is rarely consumed outside the large towns.

The hair is lightly pigmented, the colour ranging from white or light yellow to grey. The eyelashes are more pigmented than the scalp hairs, and appear yellow to reddish brown. On the scalp the individual hairs are straight or wavy—not curly as in the normal negro child. They are finer in texture than normal, but they are firmly embedded in the scalp and cannot be drawn out painlessly as in kwashiorkor. Hence in typical cases there is no alopecia.

The skin is generally hypopigmented; it showed some powdery desquamation in all cases, although this was only slight and localized in some. Infestation with ectoparasites—scabies and chiggers—is unusually intense. "Septic spots," scabs, and erosions are common, but they clear up as soon as the ectoparasites have been dealt with.

The affected children are unusually docile or even apathetic, and this may partly account for the high infestation with ectoparasites. The behaviour and appearance are so "feminine" that in male cases it is often difficult to believe the patient is a boy.

All cases showed anaemia. Oedema was noted in every case, but it was never gross as in kwashiorkor. Muscular wasting was slight or absent. Among other signs we observed an unusually heavy deposit of "tartar" on the teeth, with patchy gingivitis. The teeth were small, and in one case the tips of the lower incisors were worn off, resembling the appearances often seen after middle age. During convalescence the teeth came up with the attached ring of "tartar," and the gums receded, leaving a clear white space between "tartar" and gum. An important negative finding was the absence of any active lesion of the ariboflavinotic syndrome. In one case there was depigmentation at the angles of the mouth and tip of the prepuce.

Microscopically, the individual hairs were seen to be yellow or reddish, straight or wavy, and more cylindrical than normal. Hairs removed during convalescence showed these appearances at the free ends, while below they were black, stout, and strap-like. In typical cases we noted at all stages that the hairs broke off when we tried to remove them for examination. This is in contrast with kwashiorkor, in which the hairs with most of the bulb attached come out with a gentle pull. Sections of skin were not available for histological study. Clinically the absence of hyperpigmented scaling which characterizes kwashiorkor suggests that loss of pigment through exfoliation is not sufficient to account for the extensive depigmentation.

The natural course of the condition is unknown. Probably most of these patients drift into a state of chronic marasmus or die from sepsis or concurrent disease. When put on a diet containing liver, milk, and yeast changes occur rapidly. The hair darkens near the scalp and comes up strong, dark, and curly. The minimum time taken for the first change in colour to be observed was three weeks. The anaemia clears up, the oedema disappears, the child puts on weight and recovers its natural aggressiveness. On the hospital "full diet" for adults, one patient, aged 9 years, failed to put on weight or make any progress for four weeks.

We gave injections of 25 mg. of calcium pantothenate daily for two weeks to two cases, using the adult "full diet" as a basal ration. After three weeks the hair came up black near the scalp in both cases. A case on the same diet, with 100 mg. *p*-aminobenzoic acid thrice daily for two weeks, showed no change after a month. We know too little about the pantothenate content of local foods, and in these cases the controls were not strict enough to allow us to incriminate pantothenic acid definitely as the missing factor of the B_2 complex, but the results were suggestive.

The following case exemplifies the main features of the condition:

Illustrative Case

An African boy aged 4 years was admitted to the African Hospital, Lagos, on April 13, 1945, for general weakness, oedema, and cessation of growth. The parents, who lived in the country, placed the child in hospital and went away without giving a detailed history of the case.

On examination he showed generalized hypopigmentation, most pronounced about the scars of old scabietic lesions, which were still dead-white. The hair on the scalp was white, fine, wavy, and fairly luxuriant in growth. The individual hairs could not be extracted easily. The eyelashes were red. Scabies was generalized and intense. Six fully grown chiggers in addition to numerous smaller ones were removed from about the toes. There was pitting oedema

about the ankles and over the sacrum. The mucous membranes were pale, and a blood count on April 27 showed: R.B.C., 1.8 millions; Hb, 30%; W.B.C., 14,000 (polymorphs 39%, lymphocytes 54%, monocytes 2%, eosinophils 5%). The tongue, lips, and external genitals were free from lesions. There was some "crazy-pavement" scaling on the shins.

He was noticeably docile and feminine in appearance. Not only did he not resent the extraction of occasional hairs for examination, but even the giving of hypodermic injections provoked no resentment.

Treatment.—The patient was put on the basic children's diet, which contains 6 oz. (170 ml.) of milk daily. He was given daily injections of 40 mg. of calcium pantothenate for 12 days. The chiggers were removed, and the scabies responded rapidly to benzyl benzoate solution.

After three weeks there was a good deal of improvement in the general condition, although some oedema was still present. The hairs could be seen coming up dark near the scalp, and with a magnification of ×10 quite a sharp line of demarcation could be made out in individual hairs. At this stage he was put on iron and, later, dewormed. Progress was rapid; his weight increased, and he became naughty and boyishly aggressive in about six weeks from admission. His weight on admission was 21 lb. (9.5 kg.), and on discharge (June 16), 28 lb. (12.7 kg.).

Discussion

The circumstances in which achromotrichia or grizzling occurs might be classified as follows:

1. In carnivora inhabiting the polar regions, where it occurs as a seasonal change. Genetic factors probably account for it here, although nutritional factors cannot be completely ruled out.

2. In middle and old age in man—*canities*. The process is common in negroes, although perhaps not so common as in white races. Sieve (1941) reported some improvement in cases treated with *p*-aminobenzoic acid, but his results have had no general confirmation.

3. Experimentally, grizzling and alopecia have been produced in various circumstances of malnutrition in animals, and particularly with deficiencies of the B_2 complex. Morgan and Simms (1940) produced grizzling in rats, which was cured by a filtrate containing pantothenate. This was confirmed by Unna *et al.* (1941), using pantothenic acid.

Ansbacher (1941) identified *p*-aminobenzoic acid as an anti-grey-hair factor in rats. Inositol deficiency, according to Woolley (1941), induces grizzling in mice. According to Martin and Ansbacher (1941), inositol and *p*-aminobenzoic acid are complementary in the prevention of grizzling. Martin (1942) has reported grizzling in rats following a deficiency of "folic acid." The grizzling which arises from pantothenate deficiency in rats is associated with other signs such as blood-caked whiskers, "rusty spots," and, post mortem, adrenal haemorrhages. Signs of pantothenate deficiency in the pig include an extensive dermatitis, ulcerative colitis, and spastic paralysis.

Kerlan and Herwick (1943) have reported negative results with calcium pantothenate, in a dosage of 20 mg. orally per day for six months, in the greying (canities) of middle and old age in man. The grizzling in our cases has been observed only in children and young adults, and responds to dietetic treatment. We are satisfied that the deficiencies concerned in both types of achromotrichia can be traced to factors of the B_2 complex. Our efforts at a more detailed analysis of the aetiology have led us to the following conclusions:

(*a*) The parakeratosis of recent acute kwashiorkor, by giving rise to rapid and extensive exfoliation, leaves a depigmented skin at the site of exfoliation. The normal dark curly hairs fall out and the new crop is sparse and depigmented. The missing factor is riboflavin.

(*b*) In primary nutritional achromotrichia there is a deficiency of some factor of the B_2 complex in the diet. This factor controls the colour and texture of the hair and may have some influence on haemopoiesis and the development of the teeth. The missing factor may be pantothenic acid.

(*c*) There is a large group of mixed cases in which both riboflavin and pantothenate deficiencies operate. It is possible that in many cases of kwashiorkor, riboflavin deficiency, by causing anorexia and inanition, would lead to a secondary deficiency of the B_2 factor concerned with pigment formation.

Summary

Two types of achromotrichia have been encountered in malnutrition associated with deficiencies of the vitamin B_2 complex in Africans.

One, associated with alopecia, is seen in kwashiorkor. Parakeratosis appears to be responsible for this type.

The second type—primary nutritional achromotrichia—is believed to be due to a deficiency of a B_2 factor—possibly pantothenate—in the local diet.

I am indebted to the pathologist, African Hospital, Lagos, for the sections of skin in kwashiorkor and for the other pathological examinations; and also to the Medical Adviser, Colonial Office, for permission to publish this paper. Messrs. Glaxo Laboratories, Ltd., kindly provided free supplies of calcium pantothenate.

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THE CONUS MEDULLARIS SYNDROME IN SPINAL CONTUSION

BY

G. A. RANSOME, M.R.C.P.
Lieut.-Col., I.A.M.C.

R. K. A. van SOMEREN, F.R.C.S.Ed.
Lieut.-Col., R.A.M.C.

AND

J. F. STOKES, M.R.C.P.
Lieut.-Col., R.A.M.C.

The conus medullaris syndrome is an uncommon variant of the clinical picture of spinal concussion or contusion. Its rarity has prompted us to give a brief description of two cases. The first case is recorded from memory; this patient was studied in Singapore by one of us (G. A. R.) in conjunction with Col. Julian Taylor, and his case sheets shared the fate of many others in the Malayan debacle. The second case was observed on Ramree Island.

Case Records

Case 1.—A young aircraftman was sleeping in his quarters on the night of Dec. 10, 1941, when a sudden explosion blew him through an asbestos partition on to the floor beyond. Though he was painfully aware of a bruise on his right hip he could move his legs, and asserted that he could have walked to the C.C.S., to which he was carried on a stretcher. With the aid of morphine he slept till the following morning, when he awoke to find himself unable to pass water and incontinent of faeces. He was first seen by G. A. R. on Dec. 19. There was complete anaesthesia to all forms of sensation on both sides of S 3, S 4, and S 5. An extension from the anaesthetic area of hypo-aesthesia for a few inches down the back of each thigh argued partial involvement of S 2. Power in the lower limbs was good, apart from some weakness of the flexor thrust in the right foot and weakness of the long flexors of the digits in both feet. There was no loss of vibration sense. The knee-jerks were present, the ankle-jerks absent. Lumbar puncture showed no increase of cells, protein, or pigment. Skiagrams of the whole spine revealed no fracture. Cystometry showed an atonic bladder. There was little improvement by the time he left Singapore on Feb. 10, 1942. The hypo-aesthetic area (S 2) had receded, but there was no change or dissociation in the main area of anaesthesia. The flexor thrust of the right foot was somewhat stronger. Some form of softening of the conus was postulated. Ignorance of the precise pathology involved made prognosis difficult, but it was considered poor in view of the minimal change in eight weeks.

Case 2.—No other case was reported in the Far Eastern theatre of war until May 29, 1945, when a young sepoy of the Indian Engineers fell from a tree, first on his feet and then on to his back. He was carried to his tent complaining of pain over the lower thoracic spine. He could flex his legs, but made no attempt to

depigmentation of the skin may be intense while the hair still retains its colour. Alopecia of a "moth-eaten" type is constant. (ii) In chronic cases of kwashiorkor, achromotrichia and alopecia run parallel with depigmentation of the skin. (iii) Among the remaining cases, which constitute a large group, we identified eleven cases of what appears to be a separate syndrome in which achromotrichia is the most prominent feature. In these cases the moth-eaten alopecia of kwashiorkor was not seen, signs of ariboflavinosis were minimal or absent, and, furthermore, the mechanism of depigmentation appeared to be different from that which operates in kwashiorkor.

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In the syndrome about to be described the most striking finding is achromotrichia. The clinical picture abstracted from eleven cases might be set down as follows.

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Illustrative Case

An African boy aged 4 years was admitted to the African Hospital, Lagos, on April 13, 1945, for general weakness, oedema, and cessation of growth. The parents, who lived in the country, placed the child in hospital and went away without giving a detailed history of the case.

On examination he showed generalized hypopigmentation, most pronounced about the scars of old scabietic lesions, which were still dead-white. The hair on the scalp was white, fine, wavy, and fairly luxuriant in growth. The individual hairs could not be extracted easily. The eyelashes were red. Scabies was generalized and intense. Six fully grown chiggers in addition to numerous smaller ones were removed from about the toes. There was pitting oedema

about the ankles and over the sacrum. The mucous membranes were pale, and a blood count on April 27 showed: R.B.C., 1.8 millions; Hb, 30%; W.B.C., 14,000 (polymorphs 39%, lymphocytes 54%, monocytes 2%, eosinophils 5%). The tongue, lips, and external genitals were free from lesions. There was some "crazy-pavement" scaling on the shins.

He was noticeably docile and feminine in appearance. Not only did he not resent the extraction of occasional hairs for examination, but even the giving of hypodermic injections provoked no resentment.

Treatment.—The patient was put on the basic children's diet, which contains 6 oz. (170 ml.) of milk daily. He was given daily injections of 40 mg. of calcium pantothenate for 12 days. The chiggers were removed, and the scabies responded rapidly to benzyl benzoate solution.

After three weeks there was a good deal of improvement in the general condition, although some oedema was still present. The hairs could be seen coming up dark near the scalp, and with a magnification of ×10 quite a sharp line of demarcation could be made out in individual hairs. At this stage he was put on iron and, later, dewormed. Progress was rapid; his weight increased, and he became naughty and boyishly aggressive in about six weeks from admission. His weight on admission was 21 lb. (9.5 kg.), and on discharge (June 16), 28 lb. (12.7 kg.).

Discussion

The circumstances in which achromotrichia or grizzling occurs might be classified as follows:

1. In carnivora inhabiting the polar regions, where it occurs as a seasonal change. Genetic factors probably account for it here, although nutritional factors cannot be completely ruled out.

2. In middle and old age in man—*canities*. The process is common in negroes, although perhaps not so common as in white races. Sieve (1941) reported some improvement in cases treated with *p*-aminobenzoic acid, but his results have had no general confirmation.

3. Experimentally, grizzling and alopecia have been produced in various circumstances of malnutrition in animals, and particularly with deficiencies of the B_2 complex. Morgan and Simms (1940) produced grizzling in rats, which was cured by a filtrate containing pantothenate. This was confirmed by Unna *et al.* (1941), using pantothenic acid.

Ansbacher (1941) identified *p*-aminobenzoic acid as an anti-grey-hair factor in rats. Inositol deficiency, according to Woolley (1941), induces grizzling in mice. According to Martin and Ansbacher (1941), inositol and *p*-aminobenzoic acid are complementary in the prevention of grizzling. Martin (1942) has reported grizzling in rats following a deficiency of "folic acid." The grizzling which arises from pantothenate deficiency in rats is associated with other signs such as blood-caked whiskers, "rusty spots," and, post mortem, adrenal haemorrhages. Signs of pantothenate deficiency in the pig include an extensive dermatitis, ulcerative colitis, and spastic paralysis.

Kerlan and Herwick (1943) have reported negative results with calcium pantothenate, in a dosage of 20 mg. orally per day for six months, in the greying (canities) of middle and old age in man. The grizzling in our cases has been observed only in children and young adults, and responds to dietetic treatment. We are satisfied that the deficiencies concerned in both types of achromotrichia can be traced to factors of the B_2 complex. Our efforts at a more detailed analysis of the aetiology have led us to the following conclusions:

(*a*) The parakeratosis of recent acute kwashiorkor, by giving rise to rapid and extensive exfoliation, leaves a depigmented skin at the site of exfoliation. The normal dark curly hairs fall out and the new crop is sparse and depigmented. The missing factor is riboflavin.

(*b*) In primary nutritional achromotrichia there is a deficiency of some factor of the B_2 complex in the diet. This factor controls the colour and texture of the hair and may have some influence on haemopoiesis and the development of the teeth. The missing factor may be pantothenic acid.

(*c*) There is a large group of mixed cases in which both riboflavin and pantothenate deficiencies operate. It is possible that in many cases of kwashiorkor, riboflavin deficiency, by causing anorexia and inanition, would lead to a secondary deficiency of the B_2 factor concerned with pigment formation.

Summary

Two types of achromotrichia have been encountered in malnutrition associated with deficiencies of the vitamin B_2 complex in Africans.

One, associated with alopecia, is seen in kwashiorkor. Parakeratosis appears to be responsible for this type.

The second type—primary nutritional achromotrichia—is believed to be due to a deficiency of a B_2 factor—possibly pantothenate—in the local diet.

I am indebted to the pathologist, African Hospital, Lagos, for the sections of skin in kwashiorkor and for the other pathological examinations; and also to the Medical Adviser, Colonial Office, for permission to publish this paper. Messrs. Glaxo Laboratories, Ltd., kindly provided free supplies of calcium pantothenate.

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THE CONUS MEDULLARIS SYNDROME IN SPINAL CONTUSION

BY

G. A. RANSOME, M.R.C.P.
Lieut.-Col., I.A.M.C.

R. K. A. van SOMEREN, F.R.C.S.Ed.
Lieut.-Col., R.A.M.C.

AND

J. F. STOKES, M.R.C.P.
Lieut.-Col., R.A.M.C.

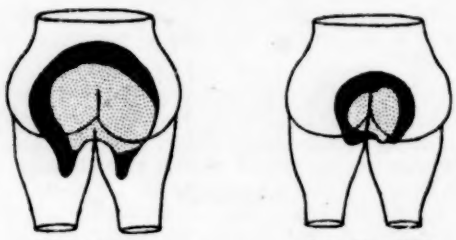
The conus medullaris syndrome is an uncommon variant of the clinical picture of spinal concussion or contusion. Its rarity has prompted us to give a brief description of two cases. The first case is recorded from memory; this patient was studied in Singapore by one of us (G. A. R.) in conjunction with Col. Julian Taylor, and his case sheets shared the fate of many others in the Malayan debacle. The second case was observed on Ramree Island.

Case Records

Case 1.—A young aircraftman was sleeping in his quarters on the night of Dec. 10, 1941, when a sudden explosion blew him through an asbestos partition on to the floor beyond. Though he was painfully aware of a bruise on his right hip he could move his legs, and asserted that he could have walked to the C.C.S., to which he was carried on a stretcher. With the aid of morphine he slept till the following morning, when he awoke to find himself unable to pass water and incontinent of faeces. He was first seen by G. A. R. on Dec. 19. There was complete anaesthesia to all forms of sensation on both sides of S 3, S 4, and S 5. An extension from the anaesthetic area of hypo-aesthesia for a few inches down the back of each thigh argued partial involvement of S 2. Power in the lower limbs was good, apart from some weakness of the flexor thrust in the right foot and weakness of the long flexors of the digits in both feet. There was no loss of vibration sense. The knee-jerks were present, the ankle-jerks absent. Lumbar puncture showed no increase of cells, protein, or pigment. Skiagrams of the whole spine revealed no fracture. Cystometry showed an atonic bladder. There was little improvement by the time he left Singapore on Feb. 10, 1942. The hypo-aesthetic area (S 2) had receded, but there was no change or dissociation in the main area of anaesthesia. The flexor thrust of the right foot was somewhat stronger. Some form of softening of the conus was postulated. Ignorance of the precise pathology involved made prognosis difficult, but it was considered poor in view of the minimal change in eight weeks.

Case 2.—No other case was reported in the Far Eastern theatre of war until May 29, 1945, when a young sepoy of the Indian Engineers fell from a tree, first on his feet and then on to his back. He was carried to his tent complaining of pain over the lower thoracic spine. He could flex his legs, but made no attempt to

stand. His unit M.O. reported normal power and movement of the limbs, but had to catheterize him for retention of urine. Examination on May 29 showed a symmetrical area of anaesthesia involving S 3, S 4, and S 5, with partial affection of S 2, though maximal stimuli were felt over the latter area. There was no dissociated anaesthesia. Abdominal and cremasteric reflexes were present.



May 29, 1945. July 22, 1945

Diagrams showing anaesthetic and hypo-aesthetic areas in Case 2. Stippled area = anaesthetic; black area = hypo-aesthetic.

Knee-jerks were present, ankle-jerks absent, and plantar responses flexor. Lumbar puncture revealed clear fluid under a pressure of 135 mm. C.S.F. There was no block or any increase in cells, protein, or pigment. Skiagrams showed no fracture of the spine. Cystometry was not carried out. On May 29 suprapubic cystotomy was performed. By June 4 the hypo-aesthetic area of S 2 had largely disappeared, and there was no dissociation. On June 9 sensation began to return in the anaesthetic area, and the anal sphincter was functioning. On July 22 muscular tone was normal; no loss of power was detected. Knee-jerks were present, ankle-jerks absent, and plantar responses flexor. Bulbocavernosus and anal reflexes were negative. Erection was absent. Sensation: Cotton-wool touch well appreciated over all areas except immediately around the anus. Sensitivity to pinprick all over S 2, S 3, and S 4, but well-defined hypo-aesthesia over this area. Loss of sensation over the immediate perianal region. Hot and cold sensation poorly appreciated over S 2, S 3, and S 4, covering an area slightly more extensive than that hypo-aesthetic to pinprick. Protopathic heat appreciated over this area. There was blunting of pinprick sensation and poor appreciation of heat over the sacral areas of the scrotum and penis, with a clear-cut change to normal when the lumbar areas were reached. No urine had yet passed per vias naturales. Since war moves doctors on and patients back, it was improbable at the time of writing that this man could be followed much further, but it will be seen from the diagram that there has been considerable improvement over a period of time comparable to that during which the first case was observed.

Discussion

It only remains to call attention to the fact that, as the anaesthesia resolves in Case 2, its dissociation, not apparent during the first few weeks of recovery, is reminiscent of the sensory loss seen in cases of syringomyelia. This suggests to us that the essential morbid anatomy consists of a haemorrhage into the grey matter of the conus medullaris.

Medical Memoranda

Perforated Duodenal Ulcer at the Age of 12

The following case is of interest in view of the age of the patient and the absence of any previous dyspeptic symptoms.

CASE HISTORY

The patient, a girl aged 12, was admitted to hospital on Nov. 15 complaining of severe generalized abdominal pain of two hours' duration accompanied by repeated vomiting and nausea. There were no urinary symptoms and the child had had a normal motion that morning.

On examination she was obviously suffering from a moderate degree of shock. The tongue was slightly coated and there was generalized tenderness, maximal just below and to the left of the umbilicus, with marked guarding in all quadrants. There was no abdominal hyperaesthesia, and on rectal examination she was tender on the left side, both anteriorly and posteriorly. The patient was treated for shock, and after four hours was considered fit for operation.

The abdomen was opened through a right paramedian incision and thin yellowish-brown fluid was found in the lower peritoneal cavity. A small perforation of the anterior wall of duodenum 1/16 in. (1.6 mm.) in diameter was discovered from which bile-stained fluid was oozing. Induration around the perforation suggested the presence of a duodenal ulcer. The wound was sutured in two layers and closed with suprapubic drainage.

The child made an uninterrupted recovery, and was given six weeks' in-patient medical treatment, including dieting, antispasmodics, and antacids, before discharge. No dyspeptic symptoms were complained of before or after the operation.

My thanks are due to Dr. R. R. M. Porter, senior honorary surgeon to the Southport Infirmary, who performed the operation, for permission to publish this case.

K. B. N. FREEMAN, M.B., Ch.B.,
Senior House-Surgeon,
Southport General Infirmary.

Technique for Use in the Guillotine Operation

The guillotine operation in recent years has largely fallen into disfavour among E.N.T. surgeons for the very good reason that, while it was possible to be certain of a full view unobscured by blood in attacking the first tonsil, the operator's success in dealing with the second was often rendered extremely difficult—not to say impossible—by haemorrhage filling the pharynx from the bed of the first tonsil. A technique which I have followed for some considerable period eliminates this difficulty.

It is, of course, a truism that each case must be examined to make certain that the tonsil is of the infantile pedunculated type and not of the adult type in which the lower pole blends insensibly with the lymphoid tissue on the lateral pharyngeal wall and the back of the tongue. In the latter case it is impossible to engage the guillotine, and the method should be dissection. In cases suitable for the guillotine operation, which in my opinion form the great majority of infantile cases, the following technique is adopted.

METHOD

The patient is premedicated with "seconal" (dosage appropriate for age and weight) and 1/100 gr. (0.65 mg.) of atropine by mouth one hour before operation. Premedication carried out in this way entirely eliminates psychological trauma, and there is, in fact, no need for the child to know that an operation has taken place, as a skilled anaesthetist can induce without the patient realizing what is happening. Induction is by ethyl chloride followed by open ether, anaesthesia being carried to the top of the first plane of the third stage.

A tonsil gag is inserted and a final view of the field taken by means of a right-angled spatula. The surgeon then has available two matched guillotines of suitable size. It is essential for the success of this technique that the guillotines used should be so blunt that there is no fear of their cutting through the tissues when they are closed; the tonsils are thus completely snared, and are removed by digital dissection with the first finger of the left hand pressing the lateral pharyngeal wall away from the tonsil, and not by tearing the tonsil off the lateral pharyngeal wall by traction with the guillotine. Having selected the size required, he then stands at the head of the table, the anaesthetist steadying the head while standing to the left, and at the same time controlling the gag. The operator engages the guillotine on the left tonsil, closes it, the handle then being handed to an assistant, who presses the guillotine as much to the left as is possible. The surgeon then takes the other guillotine, changes his position to the right-hand side of the patient, and proceeds to guillotine the right tonsil in the usual way, removing it completely. His assistant then hands to him the first guillotine, which is engaged on the left tonsil, and he then proceeds to complete its enucleation. By this time the patient should be coming round from the anaesthetic, and the adenoids are then removed.

In my experience this makes the operation extremely easy; there is no hurry or rush to attack the second tonsil, and it is surprising, but true, that there is plenty of room in even a very young child's mouth for two guillotines to be *in situ* together. The teaching of the operation to a house-surgeon is also much easier, as the surgeon himself has entire control of the situation during the operation, which is, of course, impossible by the usual technique, because if the learner has failed with the second tonsil the mouth is then a pool of blood, the patient is coming round from the anaesthetic, and it is practically impossible for the surgeon to correct the mistake made by the operator. I now carry out this technique exclusively. In my hands I find that the disadvantages of the guillotine operation are eliminated. One can by this method be as certain of removing both tonsils completely as one is when carrying out the dissection operation.

MARTIN HENRY, M.R.C.S., L.D.S.,
Aural Surgeon, Chelmsford and Essex Hospital.

Reviews

NEUROPATHOLOGY

Textbook of Neuropathology. By Arthur Weil, M.D. Second edition. (Pp. 356; 289 illustrations. 25s.) London: William Heinemann Medical Books.

It is ten years since Dr. Arthur Weil's text appeared, and partly because of its intrinsic merits, and partly also because it came at a time when such a book was badly needed, it became very popular. The second edition is very similar to the first, and it remains a fairly small textbook of neuropathology which deals with fundamentals. Dr. Weil has, however, recognized the rapid progress of experimental neuropathology in some of the additions he has made in this edition. The more welcome of these are short sections dealing with the vitamin deficiency diseases and the pathology of different forms of shock treatment of the psychoses. The text is unusually well illustrated, for there are nearly as many illustrations—mostly photographs—as there are pages, but we have become so used to excellent reproduction of photomicrographs that we feel that Dr. Weil could have been better served in this respect. Nuclear and cellular detail is often blurred, and some of the plates will not mean much to any but the expert who knows what to read into a picture.

An appendix of staining methods contains formulae for ten stains, one chosen for each tissue, but this is such an important part of practical neuropathology that the book's value would have been increased if more than eight pages had been devoted to it. The book ends with a short bibliography with subject headings which at least gives an entry to the literature.

In assessing its value to the specialized student the price of the book must be added to its other qualities.

GENERAL SURGERY

The 1945 Year Book of General Surgery. Edited by Evarts A. Graham, M.D. (Pp. 736; illustrated. 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

The 1945 volume of the *Year Book of General Surgery* maintains the high standard of selection which we have noted in previous issues; the editorship remains in the competent hands of Evarts Graham. As might be expected, the number of articles on purely military surgery is smaller than in recent years, though there are still references to such subjects as parachute and fatigue fractures, blast injuries, gunshot wounds of the chest, immersion foot, etc. A book of this character obviously does not lend itself to a critical review since it consists wholly of summaries of large numbers of articles. The "Quiz" which the publishers continue to print on the cover sheet as an inducement to the ignorant to buy is always intriguing. We will quote some of the questions. "For what anatomical structure does one use the Lantzounis periosteocapsuloplasty for congenital dorsal subluxation?" "Give the synonym for meningorachidian venous system and name the other three venous systems." "What is the relationship röentgenographically between a hamartoma and a Ghon tubercle?" And so on. If one's knowledge does not extend to the answers to these questions it is, of course, necessary to acquire the book.

HOSPITAL LAW

Notes on Points of Law Affecting Voluntary Hospitals. Second Edition. By Sir William Baynes, Barrister-at-Law. (Pp. 185. 10s. 6d.) London: British Hospitals Association. 1946.

This valuable little book is now considerably larger and includes a number of model forms. It makes no claim to be a textbook of hospital law, but consists of a number of sections, arranged in alphabetical order, dealing with the law relating to most of the topics within the province of a hospital administrator. It is built on the answers given by Sir William Baynes during the last fifteen years to questions actually put by secretaries of voluntary hospitals about their legal problems. He surveys, of course, the important decision of the Court of Appeal in *Gold* v. *Essex C.C.* (1942) 2 KB 293, in which a county council was held liable for the negligence of a radiographer and the court indicated clearly that the principles on which they had come to their decision would apply also to nurses. Perhaps he ought to have hinted, in saying that a hospital is not liable for the negligence of its medical staff in purely professional matters, that the *Gold* decision threw some doubt even on this immunity, which the case of *Hillyer* v. *St. Bartholomew's Hospital* (1909) 2 KB 820 had been assumed to secure absolutely. The variety of the questions which he covers is astonishing. The hospital secretary will find information on such diverse subjects as the ownership of *x*-ray films, the circumstances in which a hospital may establish pay-beds, road traffic cases, trusts, insurance, employees, blood transfusions, suicide, and taxation. The book, however, does not cover questions peculiar to municipal hospitals or mental hospitals.

ESSENTIAL HYPERTENSION

An Introduction to Essential Hypertension. By Richard F. Herndon. (Pp. 88; illustrated. $2.50 post paid, or 14s.) Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 1946.

This book by Dr. Richard F. Herndon contains more than its name implies. It comprises a very full survey of the whole topic, compressed into a remarkably small compass. But this does not make it in the least unreadable. It is, in fact, extremely interesting and well put together. The exposition is clear and complete. So much has been written on this subject lately, particularly in America, and so much important work has been done in the last ten or twelve years, that a full survey of these interesting and important advances is most valuable. As the references are given at the foot of the page, it is easy to turn to them as one reads. By using a variety of type, the important statements are made conspicuous. Hypertension is defined as existing when the pressures are consistently above 150/90. The aetiology and mechanism are clearly discussed, with a full exposition of the humoral factors, though the conclusion is that the real fundamental cause is as yet unknown. Looked upon from the physiological point of view, increased peripheral resistance provides the mechanism. The persistently raised pressure leads to pathological changes. That these changes in the kidney institute a vicious circle of progressive hypertension is hardly stressed enough.

The clinical aspects are divided into five stages; they are roughly similar to the grouping by retinal changes. In prognosis the importance of arteriolar changes and the presence of atherosclerosis and cardiac inefficiency are stressed, rather than the height of the blood pressure. Family history is hardly considered enough. The chapter on diagnosis discusses all types of hypertension; here the author is rather confused. The chapter on treatment comprises regime, diet, psychotherapy, drugs, and surgery; it is full of sound common sense and practical wisdom. There are a number of good illustrations.

This is an excellent little book, and well worth reading by anyone who wishes for up-to-date information on a subject which may well provide one of the next great advances in medical knowledge.

Notes on Books

A Food Plan for India is the title of a pamphlet issued under the auspices of the Royal Institute of International Affairs and published by the Oxford University Press at 3s. 6d. This anonymous study of the vital problem of India's food supply is introduced in a foreword by Prof. A. V. Hill. It was made by a private group of authorities, and derived directly from Prof. Hill's analysis of the situation after his five months' visit to India in 1943–4 at the invitation of the Government to advise on scientific matters, particularly in connexion with plans for future development. The pamphlet is the outcome of their investigations and discussions, in which they have drawn on the experience of many experts, both Indian and British, who have intimate knowledge of agricultural matters in India. Their plan outlines concrete proposals by which the extra 14 million annual tons of food can be obtained which, with a 50 million increase in population and with rising standards, will be required by 1953. Prof. Hill declares that, whether this is the best scheme or not, something essentially similar to it in form, scope, and boldness is the only way of meeting the food difficulty in the next ten years and of providing a foundation on which measures of longer range can be built. In this opinion he is supported by Sir Frank Engledow, professor of agriculture in the University of Cambridge.

MISS LOIS OAKES, with help from Prof. T. B. DAVIES, has produced a ninth edition of the little book *A New Dictionary for Nurses* which has had continuous popularity since its first appearance in 1932. E. and S. Livingstone, of 16, Teviot Place, Edinburgh, publish it at 4s., plus 3d. postage.

Preparations and Appliances

AN IMPROVISED CLOSED CIRCUIT

Dr. E. F. GLEADOW, D.A., writes from Worcester:

"Pluto" came into being with the invasion of Europe, when delivery dates were a myth and the need for an additional closed circuit a reality, and during the very busy period that followed unfailing satisfactory service was given. No particular claim to merit can be made for this improvised closed circuit, but brief details of its construction may still be of interest to others, even though the time be past when anaesthetists were so often reduced to makeshift. That it came into being at all is due not so much to individual ingenuity as to the fortunate accumulation in the department of a number of spare parts, bits and pieces.

This collection was topped off by the chance arrival for the Boyle-Waters apparatus of a spare soda-lime canister without the essential flange, which naturally led to the immediate construction of the closed circuit itself; a couple of standard gas unions providing excellent connexions, readily detachable but unfailingly gas tight.

Description of Apparatus

The Circuit.—The one-way valves have always been located in the E-piece carrying the mask and are of the rubber flap type used on the Alpho-Blease apparatus; the gases from the flowmeter are led direct to this point. The expiratory tubing terminates at the rebreathing bag on a standard Boyle mount plugged into the original "head" of the machine, which consisted of two more rebreathing bag-mounts soldered at right angles, the left vertical and the right horizontal. The arrangement of the latter is unchanged, but the apparent position of the former has been altered by the insertion of some copper tubing to facilitate the simultaneous control of the mount shut-offs by the addition of the large inverted U lever. In its original position the vertical mount had its bag aperture soldered to the free limb of the canister mount, and its lower leg connected by corrugated tubing to the absorber bottom,

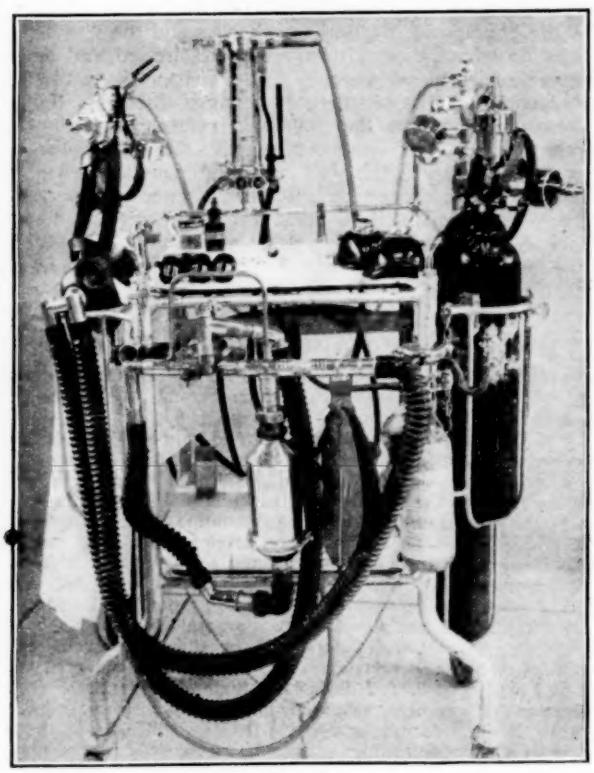


FIG. 1

while the upper carried the escape valve and facepiece mount whence the inspiratory tubing leads. In either arrangement when one mount is shut off the other is open, and there is complete control of the absorber. The canister cannot be removed without opening the circuit, but this is a fault found on at least one more professional piece of apparatus. In its original form most of the tubing was not detachable, but gradually tubing-mounts, angle-pieces, and adaptors have eliminated this inconvenience.

The Flowmeter.—In the absence of a suitable flowmeter it was found possible to use the standard dry Coxeter, but, the rates of flow being such that the bobbins no more than trembled on their seatings, it was felt that some modification was essential before the machine could be left to comparatively inexpert supervision. Water

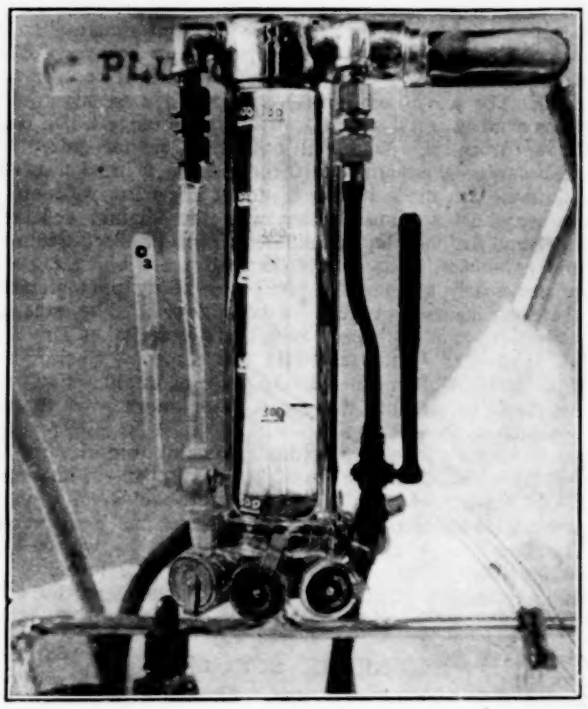


FIG. 2

depression was chosen as the best method, and was provided by the removal of all the original interior of the meter and the substitution of three plain glass tubes. To their tops the incoming gases were brought from the apertures in the flowmeter base by fine copper tubing, which can be seen as a dark shadow on the left of Fig. 2. A carburettor jet let into the top of each tube provided the necessary outflow, and was easily reamed out with a dental broach to give the optimum aperture. The outer casing was then filled with water to within an inch of the top.

Calibration was checked against three rotameters and carried out by collection under water against time; being recorded on the outside of the meter, it is necessary for the eye to be at the same level as the top of the depressed column to get an accurate reading—particularly since the convex glass and contained water form a magnifying lens for the tubes. The rates of flow obtainable are comparatively small, but have proved quite adequate where a barbiturate induction is employed. Induction with cyclopropane alone would probably be easier with the substitution of a larger rebreathing bag. Stops have been fitted to the control knobs to prevent the passage of large volumes of gas through the depression tubes. By-passes for oxygen and for nitrous oxide have been very simply arranged by tapping into the inlets as they pass through the base of the flowmeter and leading them in again at the head, the actual components used being four standard gas angle-pieces and two gas taps with some copper tubing. Provision for dismantling the flowmeter was made by the insertion of two double pipe unions designed for a motor-cycle petrol system.

The standard Boyle's ether bottle, or a Goldman drip, can of course be plugged in as required; and, owing to the use of standard rebreathing bag and tubing mounts, it may be placed either next the flowmeter or in the circuit. The original yoke for the cyclopropane cylinder was the carbon dioxide bracket off a Magill, but this has subsequently been replaced by a modern cyclopropane yoke of smaller dimensions.

It will be noted that, despite the limitation in flow, it was possible to obtain very simply a closed circuit adequate and satisfactory for the work in hand, and at a very small cost, thus overcoming the difficulties caused for us by technical delays both in the ordering and in the supply of standard apparatus. Great credit is due to the members of the works department for their co-operation in fixing up the machine—only the lack of equipment prevented their constructing a head with the conventional type of slide—and to them I should like to express my thanks.

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THE COMMITTEE STAGE

The National Health Service Bill has now passed the Committee Stage. The proceedings of the Committee have been fully reported each week under Parliamentary Notes, and in the current Supplement we summarize at length the main points of the prolonged discussions that have taken place. It was not expected that any fundamental alterations would be made, and expectations have not been disappointed. The Government was defeated in what Mr. Bevan called a Pyrrhic victory when subsection 4 of Clause 42 was by a majority vote deleted. This subsection allowed an appeal to the Minister against any direction of the Tribunal. An amendment to provide for an appeal to the High Court was, however, defeated. Although no major change in the Bill was to be expected, the value of the Committee Stage is that a Bill is subjected to the closest scrutiny, line by line, and clause by clause. Mr. Bevan did not close his mind to a number of points that arose and exemplified his intention to keep flexible the structure he is erecting to house the new National Health Service. But on many points he remained adamant. The buying and selling of practices, for example, he persists in regarding as "an intrinsic evil"—a moral judgment which seems strangely out of context. A controversial issue is best met by the argument and not by *ex cathedra* statements. It may be noted that the Committee Stage was dealt with "in Committee upstairs" not "in Committee of the whole House," the latter being the course reserved for the more important Bills. The Bill with the alterations and amendments made in Committee now passes to the "Report Stage," when there will be some further debate. After this, the Third Reading, and the Bill will pass to the Lords.

The status of the Central Health Services Council is to be secured by making any variation in its constitution subject to a negative Resolution of Parliament. This means that a regulation is placed before the House and can be annulled by a Prayer. Regulations needing an affirmative Resolution are stated in the Bill. Such regulations were instanced by the Minister as dealing with superannuation and finance: "They have to be approved by the House before they come into operation." He pointed out that an Order was an administrative act and did not come before the House as either a negative or an affirmative Resolution. As an instance of the kind of matter that will be dealt with by Order, the Minister referred to the making of a regional authority as being a question not of principle but of "convenience, sound organization and administration." While he admitted that Ministers were taking many more powers to issue Regulations and Orders than previously, he suggested that the House of Commons also had more protection than before through the mechanism of the Statutory Rules and Orders Standing Committee. He observed, incidentally, that almost the whole of the National Health Insurance Act was operated through the issue of Regulations. Mr. Bevan wants to see the Central Council not as a specialist body but as one "limited to giving general advice." The Central Council would have representatives on each of the Standing Committees, and these would be set up after consultation with it. The Committees were not named in the Bill, because he thought it best that they should be set up from time to time according to need. On the publication of the annual report of the Central Council he agreed to the insertion of the words "after consultation with the Central Council" in the sentence in subsection 4 of Clause 2 referring to the Minister's power to withhold the report or any part of the report "if the Minister is satisfied that it would be contrary to the public interest." He promised to make it clear, if it were necessary to do so, that a Standing Committee will have power of initiation. But the powers of initiation of the Central Council seem to be restricted. Referring to the subject on which the Central Council might advise, Mr. Bevan said: "Where it might be limited, and I think properly limited, is in connexion with Industrial Health Services." If the Central Health Services Council is to be an effective body composed of men of experience and with a sense of responsibility, such limitation would seem to have little logic in it.

Perhaps the most important aspect of the future hospital services is the number of regions into which the country is to be divided. This is closely linked with the desirability of bringing the regional organization into close contact with a university. Mr. Bevan intends at an early moment to appoint the Regional Boards and to ask them to prepare draft plans. This will be done by Order. But he has promised to "see if it is possible to frame some words by which the constitution of the regional areas can be dealt with, not by affirmative, but by negative Resolution." Mr. Willink had pressed that the constitution of the region should be dealt with by affirmative Resolution. The appointed day on which the Act will come into operation is April 1, 1948, but the Minister has the power to bring parts of the scheme into operation on different appointed days. It will, therefore, be possible to notify voluntary hospitals about their position under the Act before 1948: the Regional Boards will make their plans as soon as possible after the Act has been passed. The Minister intends that the Hospital Management Committee shall have power to hold endowments. He also promised to see if it was possible for Hospital Management Committees to receive gifts: "People normally do not give gifts to a Board; they give gifts to a hospital." When the functions of Boards and Management Committees come to be defined he intends there should be "considerable devolution of responsibility" to the latter. In answer to a question on private practice for specialists, Mr. Bevan said: "This is a field in which the utmost flexibility will have to prevail." So long as he played even a small part in the public service a specialist would be considered to be in it. But Mr. Bevan also stated that he wanted a specialist "to spend as much time in the hospital precincts as possible." As to the recognition of general practitioners as specialists, he observed that he would first seek the opinion on this of the Central Advisory Medical Committee, and, secondly, that he would

consult the profession as to what body ought to advise on the definition of a specialist for the purposes of the National Health Service. Discussing "general practitioner hospitals," he observed that they should be available for the chronically ill person who could not be treated at home but could be looked after by a general practitioner in the case where specialist treatment was not required. But these hospitals would not be available to general practitioners who remained outside the service.

The long debate on Health Centres showed that there is still some confusion of thought about the exact place of these in the new health scheme, and also that Mr. Bevan is aware of the need for experiment as an important factor in their development: "It is obvious that we shall have some experimentation," he observed, but not with "the initial idea." A Health Centre serving too huge a population might be too far from some patients' homes, yet a fairly large unit was necessary if they were to be able to afford diagnostic apparatus in the Centres. While it must be a duty for local health authorities to provide Health Centres, the extent to which this could be imposed depended upon the extent to which facilities could be provided. It would be some time before the Health Centres were available. His view was that until they could build Health Centres "of a new and agreeable character" they would have to adapt old buildings. The Health Centre Service would evolve from year to year as experience dictated. Mr. Bevan considered that for the Regional Board to provide Health Centres would be administratively impossible. He struck a slightly unreal note when he said: "If we can get a stream of healthy people attending a Health Centre, it becomes a Health Centre; but if we merely have morbid cases going to a Health Centre, it becomes a Morbid Centre." It does not seem to have occurred to the Minister that healthy people would not want to spend their time "streaming" to a building equipped with diagnostic apparatus. In fact, whatever fine words may be used, Health Centres will be multiple surgeries, at which, it is true, the sick, once healed, may well receive health instruction. He added the much needed assurance that "there will be complete privacy for any confidences they [the people] may repose in their doctor. . . . I agree that the medical history should go from one professional hand to another and that it should not be available for secular scrutiny." And another welcome intention was expressed when he said: "The Minister will not accept the odium of giving directives about any particular form of therapy." This statement was made in a discussion on Clause 12 relating to the functions of Boards and Management Committees, and may be presumed to extend to the general practitioner as well as to the specialist.

Mr. Bevan said that the method and amount of remuneration of the general practitioner should be dealt with by Regulation. He was firmly convinced that there should be "an element of basic salary in the doctors' remuneration." He admitted that he found it difficult to reconcile the free choice of doctors with the abolition of capitation. A full salary basis would result in an unhealthy relationship between patient and doctor. He thought that before he expressed any definite opinion he would prefer that consultation with representatives of the profession should reach a more advanced stage, and observed that in some circumstances it would be necessary to weight the basic salary in order to get sufficient doctors into the under-doctored areas. He had an entirely open mind on the desirability of "declining" (i.e., tapering) the capitation rate. He was prepared to look at this question again as it was not a matter of fundamental principle. On the question of assistance, he thought this a desirable way of introducing a doctor to general practice, but general practitioners could not have an unrestricted right to engage any number of assistants they liked as this would interfere with the proper distribution of doctors. Assistants would not be on the list of the Local Executive Council, but the provision of assistants to principals would be taken into account by the Executive Council and the Medical Practices Committee in deciding whether an area was sufficiently doctored. In the event of a vacancy, the Executive Council would notify the Local Medical Committee; the latter would then be able to suggest the name of a suitable doctor, and this recommendation would "have very great weight." If the Executive Council agreed, it would recommend the filling of the vacancy to the Medical Practices Committee. "In fact," Mr. Bevan said, "the individual doctor will be selected by the Local Executive and not by the Medical Practices Committee." On the question of partnership, Mr. Bevan stated: "Where a partner has not got a panel, if he is in partnership with doctors who have got a panel, I am advised that nothing in this Clause [35] inhibits that partner from selling his practice." If he thought that the language of the Clause might have the effect of dissolving partnerships, he would try to seek protection against it, but he was advised that the Clause had no such effect.

Until the Bill has become an Act it will not be possible to ascertain the fully considered views of the medical profession on the Government's main proposals for a National Health Service. We shall not attempt now to forecast what the reaction of the majority of doctors will be to the principal features of the Act, on the assumption that the Act will be the present Bill amended and altered in accordance with promises made in Committee. In the meanwhile, we may note that in Mr. Bevan's view a considerable time will elapse before the whole of the scheme is in operation. In his own words: "We are short of some of the requisites with which to man it—we are short of sufficient doctors, sufficient specialists in particular, sufficient dentists, and with regard to a very vital provision in the Bill, sufficient Health Centres."

WORLD HEALTH ORGANIZATION

A new international health organization is being shaped under the broad dome of the United Nations. It is passing through much the same stages as the original health organization of the former League. To those who recall the Cannes Conference, Article 23 of the League Covenant, the Assembly resolution of 1920, and the appearance of the International Health Organization as one of the three technical bodies of the League (the others being concerned with economics and finance and with communications and transit), the parallel is almost startling, and, as the League disappointed the high expectations formed of

it, it is somewhat ominous. Yet the Health Organization has been one of the few great successes in the international field during the last quarter of a century, and on its dissolution its inheritor pays it a tribute in words and an even more flattering tribute in copying its constitution and procedure.

At San Francisco a year ago the United Nations subscribed to a declaration calling for an international conference to establish a Health Organization. One of the articles of the San Francisco charter reads that the United Nations shall promote solutions of international health and related problems. A small preparatory committee of experts was set up in the early part of this year by the Economic and Social Council of the United Nations, and, with Dr. G. B. Chisholm, of the National Health and Welfare Ministry in Canada, as rapporteur, drew up a report which was sent to a drafting committee of delegates from ten nations (including the United Kingdom, the United States, and Soviet Russia), under the chairmanship of Sir Ramaswami Mudalier, whose presidency of the recent Economic and Social Council meeting in New York has revealed him as one of the outstanding personalities on the international stage. The report proposes a world health organization as a specialized agency through which the States will co-operate for the protection and promotion of health in every country. Its aim will be to achieve the highest possible standard of physical and mental health for all peoples, to prevent the occurrence of disease and control its spread, to stimulate the development of improved health services, and to weld together for executive action the scientific and professional groups which contribute to health advancement. In emergencies it will render aid at the request of Governments. Its various functions are set out in the draft report in lettered paragraphs which almost exhaust the alphabet. They include the establishment and maintenance of an epidemiological and statistical service, the development of information services concerning health and medical care, the promotion of conventions and agreements with regard to international health, the setting up of standards for pharmaceutical, biological, and related products, and for diagnostic procedures so far as this is desirable. Other suggestions made in the Economic and Social Council when the report came under review were the undertaking of relief measures in war-scarred territories such as Greece, and particularly measures for the protection of children and the control of malaria and tuberculosis.

It is proposed that the membership of the organization should be open to all States. One question to be settled is whether trust territories, protectorates, and colonies, not eligible for separate membership of the United Nations but having their own health administrations, will be allowed to take separate action concerning parts of the work of the organization, such as international sanitary conventions. The work will be done through a world health conference to be held at least once a year, at which broad policy will be determined, activities reviewed, sanitary and quarantine regulations laid down, the international nomenclature of diseases and causes of death adjusted, and, if necessary, standards established for such things as the purity and potency of drugs. The executive of this conference will be a body of from twelve to eighteen persons designated by the member States and will meet at least twice a year. There will be a director-general and the usual secretariat and commissions and committees. It is proposed that the staff should be under the same statutory regulations and have the same salary scales as the staff of the United Nations, and they will be expected to observe the same international loyalty and to have the same freedom from national influences. A matter undecided is whether the organization should be housed at the headquarters of the United Nations or should have an independent location. Some think that the latter would be preferable as signifying dissociation from political influences, and also as enabling the organization to be in close proximity with other specialized agencies, such as the Office International d'Hygiène Publique in Paris, the League of Red Cross Societies, and perhaps U.N.R.R.A., supposing its activities continue.

International movements are necessarily slow. They cannot proceed by the hammer rule of the majority but only by gradual adjustment and compromise. Resolutions, which seem to consist mostly of preamble, filter through a succession of assemblies and committees of diminishing size until they reach a drafting subcommittee, and then a report appears and makes the reverse journey. Even when a convention has been fashioned it has to await the ratification of Governments. But, as Dr. Johnson said of women's preaching, the surprising thing is to find it done at all. Moreover, during this circumlocutory procedure a certain amount of education is always going on; people are becoming accustomed to the idea of international co-operation in new fields, and gradually a capital of goodwill is accumulated. It is not without significance that after each of the two world wars those concerned with establishing the machinery of peace should have regarded health as one of the necessary conditions of such establishment. As one member of the Economic and Social Council put it, "The moral credit of the Health Organization's work should benefit the United Nations."

LOCAL COOLING

Recent work on the effects of local cooling has thrown light upon two contrasting problems: (1) the nature, prevention, and treatment of frostbite, and (2) the virtues of local refrigeration as a therapeutic measure. The Holme lectures[1] by the late Sir Thomas Lewis dealt with the reaction of the skin and subcutaneous tissues to cold and the damage resulting therefrom. Lewis emphasized that there are two distinct types of cold injury to the skin—namely, by direct action and by freezing. Although both processes have often been confused within the term "frostbite," Lewis would restrict that term to the latter type of injury. The three clinical conditions of chilblain, erythrocyanosis, and trench foot were looked upon by Lewis as different manifestations of the same process—namely, prolonged action of cold. Histologically there is much in common, the lesions being those of subacute or chronic inflammation. With regard to the treatment of frostbite, Lewis emphasized that there is no fundamental difference between the lesions due to freezing and those due to heat, and that the rational treatment of the lesions of frostbite

[1] *British Medical Journal*, 1941, **2**, 795, 837, 869.

and of a scald have much in common. If the patient is seen at a time when the tissues are frozen then thawing must be done slowly to avoid undue swelling and pain. Friction is dangerous, as it may injure the friable tissues.

Later studies by R. Greene[2] have shown that cold produces a transudation of fluid into the surrounding tissues. The red cells left behind may silt up the blood vessels and occlude the circulation, but at all events true thrombosis does not occur primarily. This observation has been supported by the fluorescin studies of K. Lange, L. J. Boyd, and L. Loewe,[3] who found that the aggregation of red cells within the vessels could be washed away by saline perfusions. Not until 72 hours after local freezing does actual thrombosis occur, to be followed by gangrene. Furthermore, there was some suggestive evidence that the intravenous use of heparin shortly after local freezing prevented the onset of gangrene. The authors are undertaking experiments to determine the simplest means of heparinization and the longest interval between exposure to cold and the onset of effective therapy. The usual treatment of frostbitten limbs to-day takes the form of continuous local refrigeration. R. Greene,[4] with the co-operation of Mr. R. J. Simpson, has devised a "therapeutic refrigerator" wherein CO_2 snow is packed upon a tray below which the patient's limb reposes. Earlier D. R. Webster, F. M. Woolhouse, and J. L. Johnston[5] had advocated the use of dry refrigeration in the treatment of cases of immersion foot.

This practice of deliberate local cooling ties up with a good deal of recent work upon the beneficent effects of refrigeration. According to N. E. Freeman[6] gangrene results from a discrepancy between the demands of the tissues and the supply of blood to meet these nutritional needs. F. M. Allen[7-10] has shown that an animal's limb will tolerate a cutting off of its circulation for 15 hours at room temperature, but for 54 hours at zero. Small loops of bowel can be exposed to refrigeration for 16 hours and recover. Reducing the temperature of a ligated limb decreases the local metabolism and the danger of both gangrene and shock. Local injections of strychnine can be tolerated in much greater amounts if the surrounding temperature is low. B. Brooks and G. W. Duncan[11] showed that warmth applied to an infected wound hastens necrotic and inflammatory processes, while cold reduces them. These experimental observations have important bearings upon the problem of the treatment of gangrenous extremities. "That damaged patients and damaged limbs have always been warmed is not in itself a sufficient proof of its efficacy." The experiences of "refrigeration anaesthesia" for amputations upon patients who are poor surgical risks[12 13] are encouraging and may be adduced as evidence in the controversy of "cold versus heat" in the correct treatment of ischaemic limbs.

It would however be unwise to accept finality at this stage. It is doubtful whether the case for cold therapy has been proved up to the hilt. The German and Russian clinical experiences during the war are not yet available to all. H. Binhold's paper in 1942[14] entitled "Should Frostbite be Rewarmed Slowly or Rapidly?" has probably not yet received a sufficiently wide or critical audience. If cold environments are to be maintained the question arises as to how long this should be kept up, and what later reactions, if any, are to be expected. Are necrotic and infective processes merely inhibited, to return with added virulence when room temperature is eventually attained? Brooks and Duncan's work suggested that after local cold has been discontinued the morbid processes advance . . . "at the expected rate or greater," and the final necrotic area proved to be larger in cases treated earlier with cold applications.

A study of high altitude frostbite by L. Davis, J. E. Scarff, N. Rogers, and M. Dickinson[15] deserves close reading. The writers compared a series of patients treated with continued cooling for 24 to 48 hours, with cases treated by exposing the damaged parts to room temperature. They concluded that the results obtained were equal to or better than those obtained by continued cooling; though there might have been more blistering in those exposed to room temperature, there were less pain and eventually less tissue-loss. Blocking of the sympathetic trunk and of the stellate ganglion failed to augment the circulation in damaged extremities where the capillary walls had been injured or where thrombosis had occurred at the arteriolar-capillary junctions.

PLEURAL SHOCK OR CEREBRAL AIR EMBOLISM

Pleural shock is one of those conditions which have been handed down uncritically from book to book. Most people have heard of it and some believe in its existence, but few can quote an instance from their own experience. The first account of the condition appears to be that of Roger[1], who in 1864 described it as an eclamptic fit with cardio-respiratory embarrassment, tonic and clonic muscular contractions, loss of consciousness, and sometimes death. Most subsequent accounts give a similar description. Andosca and Foley[2] point out that this syndrome agrees in all particulars with that seen in cases of cerebral air embolism. There is plenty of clinical and experimental evidence to show that air embolism arises as a complication of pleural puncture, and these authors conclude that so-called pleural shock is due to air embolism and not to a pleural reflex. They quote a number of examples to support this conclusion, and also an instance of novocain poisoning in a sensitive subject giving rise to a similar symptom complex. This is a further argument against the use of local analgesia for straightforward pneumothorax refills, a subject which has recently provoked much discussion in the correspondence columns of the *Journal*.

Fortunately, cerebral air embolism is uncommon. Andosca and Foley record 12 cases, of which only 3 proved fatal, in a series of over 90,000 pleural punctures. It has been shown experimentally that a very large volume of air has to be introduced into a systemic vein to produce a fatal result—a sad blow to some writers of detective fiction—but a very small amount of air injected into a pulmonary vessel causes immediate death. There is no doubt that careful handling of the exploring, or refilling, needle, so that the lung is not punctured, will help to prevent this complication. When an air embolism occurs, little can be done to limit its effect, but if the patient survives the first few minutes he will probably recover completely. Lowering the head has been advocated, but the experimental work of Van Allen, Hridna and Clark[3] suggests that this may cause the air to enter the coronary vessels instead of the cerebral, with equally fatal results. These authors advise the administration of oxygen under pressure, but it will rarely be possible to do this in time to save life.

2 *J. Path. and Bact.*, 1943, **55**, 259.
3 *Science*, 1945, **102**, 151.
4 *Lancet*, 1942, **2**, 695.
5 *J. Bone Jt. Surg.*, 1942, **24**, 785.
6 *Arch. Surg.*, 1940, **40**, 326.
7 *Surgery*, 1938, **3**, 893.
8 *Surg. Gynec. Obstet.*, 1938, **67**, 746.
9 Ibid., 1939, **69**, 1047.
10 *Amer. J. Surg.*, 1939, **45**, 459.
11 *Ann. Surg.*, 1941, **114**, 1069.
12 *British Medical Journal*, 1942, **1**, 727.
13 Ibid., 1943, **1**, 573.
14 *Deut. Militärarzt.*, 1942, **7**, 491.

15 *Surg. Gynec. Obstet.*, 1943, **77**, 561.
16 *Union méd.*, Paris, 1864, **23**, 69.
17 *Amer. Rev. Tuberc.*, 1945, **52**, 221.
18 *Arch. Surg.*, 1929, **19**, 567.

CLINICAL PATHOLOGY IN THE HOSPITAL SURVEYS

BY

S. C. DYKE, M.D., F.R.C.P.

The recognition given to clinical pathology as an essential part of the national hospital service is a striking feature of the survey of the hospital service of England and Wales lately made for the Ministry of Health. The reports so far published are unanimous in regarding an efficient service in clinical pathology as essential for the proper practice of medicine, no matter where carried out; further, they agree in taking it for granted this service must be organized in close integration with the hospital service and its practice carried out in laboratories attached to hospitals. The surveyors of all areas in this respect speak with one voice, but individually they have concentrated their attention upon varying aspects of the subject.

Hospital Pathology; Pathology and General Practice; Pathologist as Consultant

Speaking in particular of the hospital service, the surveyors of the West Midlands area lay it down that "the pathological service must be efficient if the work of any clinical department of a hospital is to be of adequate standard. . . . All general hospitals should be provided with a pathological department within the buildings which would do the day-to-day routine investigations."

Other area surveyors have laid particular stress upon the need felt by the general practitioner for facilities for pathological service. The surveyors for the Sheffield and East Midlands area state: "In conversation with general practitioners we have heard repeatedly of certain facilities that they feel should be available to them through the out-patient service of the hospitals. Most general practitioners would like to have the right to send specimens, or patients from whom the specimens could be collected, to the hospital for pathological investigations. . . . On balance we believe that there is good reason to permit certain work of this kind." The same view is even more forcibly expressed by the surveyors for South Wales and Monmouthshire: "It is also desirable that patients referred by practitioners to consultative centres for such specialist opinions as the pathologist and the radiologist can give should have access to them without the barrier commonly interposed of having first of all to see a physician, surgeon, or other specialist."

They proceed: "But such consultations should take place at a common centre where the consultant, whether he be physician, surgeon, pathologist, radiologist, or other specialist, can avail himself of the service of any colleague whose service he may value." The surveyors for London and the surrounding area also lay stress upon the importance of consultation between practitioner and pathologist: "One of the criticisms most frequently made was of the arrangements—or lack of arrangements—for pathological services. . . . There was little opportunity for the personal consultation between the pathologist and the practitioner which is an essential feature of clinical pathology." The role of the pathologist as consultant is also emphasized in the survey of the Yorkshire area: "It is desirable that . . . there should be a closer contact and consultation between the practitioner and pathologist. . . . In general the pathologist should be considered as a consultant differing in no way from a consulting physician or surgeon."

Grading of Laboratories

All the surveys agree that clinical pathological laboratories must be attached to hospitals and that they must differ in size and importance according to the amount and the degree of specialization of the work undertaken in them; smaller laboratories should depend upon those larger and more fully equipped and staffed. Thus the West Midlands survey suggests that "in larger hospitals . . . it is necessary to make provision for special investigations. Hospitals which have these larger laboratories would be able to do work for those less fully equipped."

The North-western surveyors, having discussed the grouping of hospitals, indicate that "the hospital districts recommended in this report are suitable for laboratory districts, each to have a laboratory in whatever hospital is most suitable. . . . Other hospitals would have a subsidiary laboratory or 'side room,' according to their beds."

The Sheffield and East Midlands survey expresses the same view: "Laboratory workers even more than many other specialists should be associated with major centres. There should be a medical pathologist working in all but the smallest hospital centres and several in the largest hospital centres. There should be an Institute of Pathology in each large centre, with a team of pathologists and biochemists responsible for the ordinary clinical pathology work. . . . The clinical pathology work in the smaller centres will be done by a medical pathologist of junior standing, who should be attached to the Institute of Pathology of the appropriate larger centre and who should be supervised and periodically visited by the head of the Institute."

Three grades of hospital laboratories are envisaged in the survey of the Bucks, Berks, and Oxfordshire area:

1. Regional. This should be the central laboratory of the region, capable of dealing with any examinations in hospital pathology, with staff sufficient to act in a consultative capacity to other laboratories in the region. If possible it should be at the university centre.
2. Divisional laboratories capable of dealing with all examinations apart from those of a specialist nature.
3. Smaller laboratories situated in smaller hospitals, capable of dealing with simple hospital pathological investigations only and looking to the divisional laboratories for considerable help both in the wards and in the laboratory.

Role of the Medical Schools

The Sheffield and East Midlands survey draws particular attention to the mutual benefit to be derived from close association between the pathological departments of the divisional hospitals and that of the medical school of the region: "It is most important that the medical teaching schools should be closely associated with all this pathological work. . . . In this way the academic pathologist is constantly in touch with the clinical pathologist's problems, and the clinical pathologist is in contact with the research work proceeding in the university department."

One particular aspect of this mutual benefit receives attention in the Yorkshire survey, which points out that much valuable post-mortem material, now lost to the university departments, would, under such an arrangement, become available to them: "There is a great waste of material available for pathological investigation and research. This is particularly noticeable in the performance of post-mortem examinations, and is the more deplorable in that post-mortem examinations and the checking and correlation of clinical symptoms and diagnosis with the post-mortem findings are the foundation of clinical and scientific knowledge."

Administrative Organization; Public Health Pathology

It is implicit in the recommendations of all the surveys that the regional laboratory service should be closely integrated with the Department of Pathology of the regional university, but it is not implied that the divisional laboratories of the region should come under the control or direction of this department. The North-western survey recommends that the divisional laboratories of the hospital districts of any given region "should all be under the control of a chief pathologist of the district, who would be 'a member of the laboratory staff of the administrative area' and would be designated Director of Laboratory Services and exercise some degree of supervision over the service of the whole area. . . . The main laboratory of each district would be definitely associated with the university."

All the surveys, by implication if not by direct expression, agree in regarding clinical pathology as constituting a sphere of work apart from, though by no means independent of, public health pathology. The Sheffield and East Midlands survey is specific: "The public health bacteriology for the area is not to be regarded as a subordinate part of the hospital pathology service, and it will probably be organized on parallel but independent lines working in touch with the preventive medicine departments of the authorities of the area. Nevertheless, it is important that there should be close contact between the two groups, and it is desirable that, where possible, they should work in the same building so as to preserve the closest possible liaison."

The New Approach to Medicine

The large amount of attention devoted by the surveyors for England and Wales to the service in clinical pathology, and the unquestioned acceptance of the view that the practice of clinical medicine either in or outside of hospital is impossible without adequate laboratory assistance, are an expression of the revolution in the approach to medicine which has been gathering strength in this country for the past quarter of a century. Of particular significance is the general agreement that satisfactory results cannot be attained by mere isolated examination and report on specimens, but only by direct consultation between practitioner and pathologist.

Scotland—a Contrast

In contrast to the importance attached to clinical pathology by the surveyors for England and Wales is the paucity of reference to this service in the Scottish surveys. These number five: in two no reference is made to pathology; in the remaining three the surveyors make no reference to the desirability of bringing practitioner and pathologist into consultation, but content themselves with commending the development of a pathological service involving only the transmission of specimens for examination and report to certain designated centres. This striking contrast seems to indicate some fundamental difference between the approach to medicine in England and Wales as opposed to Scotland.

RELIEF OF FAMINE

A medical conference on famine relief was called by the Health Division of UNRRA at its European Regional Office on May 25. Those present included: Dr. C. N. Leach, Prof. H. P. Himsworth, Dr. M. Pyke, Dr. Janet Vaughan, Dr. Harriette Chick, Miss Margaret Hume, Dr. J. F. Loutit, Dr. I. A. Anderson, Dr. D. A. Smith; for UNRRA: Dr. N. M. Goodman (Director of Health, European Regional Office), Dr. J. Cottrell, Dr. A. P. Meiklejohn, Dr. H. S. Collins, Dr. B. H. Smith, Miss Jean Ritchie. The following is a summary of the principal recommendations.

Treatment of Starving Patients

The treatment of starving patients requires an adequate supply of spray-dried skimmed-milk powder, dried eggs, prepared cereals, glucose (preferably fortified with vitamins), fats, fruit juices, and flavouring agents. Apart from the lack of calories, shortage of protein is likely to be the most serious consideration, and therefore every effort should be made to increase supplies of protein-rich products, such as prepared yeast, soya, dried liver powder, protein hydrolysate for oral use, and dried slaughter-house plasma. Such products would be a very useful supplement to the diet of the starving and, in an emergency, could be used in partial substitution for dried milk and eggs. In order to hasten recovery, to prevent relapses, and to avoid overcrowding the hospitals, starving patients should be treated with a diet sufficient to supply at least 3,000 calories daily. Hospitals dealing with severe cases of starvation should have supplies of dried plasma available for intravenous therapy, in normal or double concentration as indicated.

It is not thought likely that there will be any serious incidence of florid vitamin deficiency diseases (this statement is not intended to apply to maize-eating communities). The conference considered that supplies of vitamins should be for oral use only and in amounts suitable for prophylaxis rather than for treatment. The greater part of vitamin requirements would best be met by the provision of natural, rather than synthetic, sources of vitamins—e.g., yeast extract, liver extract, fish-liver oils, and fruit juices. Tables, giving the amounts of special supplies needed to treat 100 starving patients, were prepared and agreed.

If the supply of milk for children should fail, rickets and vitamin A deficiency would become serious problems. Stocks of cod-liver oil should be on hand against such an eventuality. Because the administration of a single large dose of vitamin D has great therapeutic advantages in the prevention of rickets, adequate supplies of concentrated vitamin D in oil would be useful. Sulphonamides would be needed for the treatment of diarrhoea and the intercurrent infections, which are particularly liable to attack starving people. Penicillin would also be needed.

Present Supplies

Supplies of milk in post-war Europe have been sufficient to provide for the essential needs of young children; but there has been very little milk for adults and the older children. This, combined with the high phytic acid content of the long-extraction bread grains at present in use throughout Europe, makes the diets of adults and older children particularly deficient in available calcium. It is therefore recommended that calcium carbonate should be added to the bread. The general diet is also deficient in available iron, and in many parts of Europe anaemia is apparently prevalent. It is therefore recommended that efforts should be made to provide additional iron, in medicinal doses, especially for pregnant women and women employed in factories. Facilities for communal feeding in factories, schools, and elsewhere should be utilized to the utmost, even if the factories and schools are closed.

Rationing systems in Europe have succeeded in providing fairly adequate rations for young children, but older children, who should be growing rapidly, have often subsisted for long periods on diets providing insufficient calories for their needs. For this reason, older children and adolescents may require special consideration in the event of famine. It is obviously desirable to make the utmost effort to maintain adequate food supplies for children of all ages, but, if a fall in the caloric value of the official ration to very low levels becomes inevitable, priority over children may have to be given to the workers in essential community services, in order to prevent a complete breakdown of civilized life. In the same way, it may become contrary to the public interest to give extra food to hopeless invalids and chronic mental patients. In order to lessen the effect of shortage of calories, every effort should be made to ensure sufficient heating in living and working quarters during the winter. In urban areas, evacuation of non-essential population, children and non-working adults, to rural areas and even to other countries, should be promoted and encouraged.

Famine in a European city might be expected to affect first those living alone, the elderly, the occupants of institutions, and those without regular employment. It would be important to provide "flying squads" to search out such cases. Provision should also be made for special and regular medical inspection of orphanages, convents, old people's homes, mental hospitals, and gaols. Thereafter, ambulant cases of hunger oedema would begin to appear in increasing numbers, and would require supervision and special treatment at clinics. A considerable increase in out-patient clinic facilities would be needed, including "ambulatoria" attached to soup kitchens and other places where people congregate. Large numbers of hospital cases need not be expected at the outset, although later it might become necessary to provide extra hospital space. Doctors, nurses, health visitors, and others would be needed to staff "flying squads," "ambulatoria," and inspecting teams for institutions. Consideration would have to be given to the best way of recruiting and equipping this emergency staff from the local population, UNRRA, military, and voluntary relief organizations.

BRITISH-SWISS MEDICAL CONFERENCE

Arrangements for the British-Swiss Medical Conference, which is to be held in Basle from Sept. 16–21, are proceeding, and the following have accepted the invitation to speak: *British speakers:* Sir Hugh Cairns, Neurosurgery; Dr. E. A. Carmichael, Man in Relation to His Environment (Heat and Cold); Prof. E. C. Dodds, Synthetic Oestrogens in Relation to Cancer; Dr. N. Hamilton Fairley, Tropical Diseases, with Special Reference to the Prevention of Malaria and Typhus; Prof. A. C. Frazer, Normal and Defective Fat Absorption in Man; Dr. Donald Hunter, Industrial Medicine; Dr. R. A. McCance, Nutritional Problems; Dr. John McMichael, Circulatory Problems; Mr. J. J. Mason-Brown, Arterial Surgery; Dr. J. S. Mitchell, Experimental Radiology; Dr. R. R. Race, The Rhesus Factor; Dr. F. S. Young, Experimental Diabetes. Sir Reginald Watson-Jones has been invited to speak on surgical rehabilitation, but at the time of going to press has not accepted the invitation. *Swiss speakers:* Prof. Dr. Ed. Grasset, Primitive Tuberculosis, Primary Infection and "Premunition"; Prof. Luzius Rüedi, Acoustic Trauma, its Origin and Prevention; Prof. Dr. Rolf Meier, Specificity and Differentiation of Sympathicotropic Drug Action; Dr. J. E. Wolf, Combined Climatic and Surgical Treatment of the

Lungs; Prof. Dr. Hermann Mooser, Twenty Years of Research in Typhus; Prof. Dr. Alfred Fleisch, Nutrition in Switzerland during the War; Prof. Dr. Alfredo Vannotti, Adaptation of the Tissue Respiration to Effort and Altitude; Prof. Dr. H. Krayenbühl, Immediate and Ultimate Results of Carotid Ligation in Intracranial Aneurysms; Prof. Dr. Fritz Verzar, Muscular Efficiency; Prof. H. Rossier, Cardiac Localizations of Thrombo-angiitis Obliterans. A cordial invitation is extended by the Swiss Academy of Medical Sciences to all members of the medical profession in this country who wish to attend as paying participants in the conference and to the wives or other members of the families of such participants. No trouble is to be spared in ensuring the comfort and pleasure of guests, whether medical or non-medical members of the party.

CANADIAN DOMINION DAY HONOURS

The names of the following members of the medical profession were included in a Canadian Dominion Day Honours List published in a *Supplement* to the *London Gazette* on July 1.

C.B.E. (Civil Division)

ROBERT DAVIES DEFRIES, O.B.E., Director of Connaught Laboratories, Toronto.

ANDREW HUNTER, Chairman, Standing Committee on Nutrition, Department of National Defence, Toronto.

CHARLES VEZINA, Professor of Clinical Surgery in the Laval University, Faculty of Medicine, Quebec.

O.B.E. (Civil Division)

THEODORE DEY BAIN, Director of Medical Services, Department of Veteran Affairs, Ottawa.

JAMES LYALL COCK, Halifax, Nova Scotia.

JAMES CRAIGIE, Toronto.

THEODORE GEORGE HARWOOD DRAKE, University of Toronto.

ARMAND FRAPPIER, University of Montreal.

ALFRED KIMBALL HAYWOOD, Vancouver.

GEORGE LYALL HODGINS, Vancouver.

WILLIAM JOHN KNOX, Kelowna, British Columbia.

JOHN SINCLAIR MCEACHERN, Calgary, Alberta.

FRANK HASTINGS HAMILTON MEWBURN, Clinical Professor of Orthopaedic Surgery in the University of Alberta.

ISRAEL MORDECAI RABINOVITCH, Director of Metabolism, Montreal General Hospital.

NOEL RAVENCHIL RAWSON, Chesterfield Inlet, North-West Territories.

AUSTIN BIRRELL SCHINBEIN, Vancouver.

WALLACE BALFOUR SEATON, Ottawa.

M.B.E. (Civil Division)

GEORGE HAROLD ETTINGER, Associate Professor of Physiology in the Queen's University, Kingston, Ontario.

Reports of Societies

PERTUSSIS PROPHYLAXIS AND CONTROL

At a meeting of the Fever Group of the Society of Medical Officers of Health on June 14, with the president, Dr. M. MITMAN, in the chair, the discussion was opened by Dr. H. J. PARISH.

Dr. Parish said that whooping-cough, the most serious of the acute specific infections of childhood, caused at least 2,000 to 3,000 deaths annually in England and Wales, of which 90% were in the age group under five years. Dissatisfaction with the results of specific prophylaxis was indicated by the variety of vaccines and scales of dosage employed by different investigators; research was hampered by the lack of a good laboratory test. Vaccines were prepared to-day from virulent phase 1 organisms either on Bordet-Gengou blood-agar or on modified Hornibrook liquid medium (casein hydrolysate, starch, etc.). The suspensions could be precipitated with alum and washed in saline or buffer solution. Clinical evidence of the efficacy of vaccines was conflicting and often uncritical. McFarlan, Topley, and Fisher (*Journal*, 1945, **2**, 205), in a carefully planned investigation at Oxford, using a British vaccine, found no significant difference between inoculated and control children. A similar trial using an American vaccine had not been completed; the results so far were inconclusive, or perhaps slightly in favour of the vaccinated group. His colleague, Mr. H. Proom, in work not yet published, had obtained low-grade protection with vaccines, made with or without alum precipitation, in mice injected with a living culture intraperitoneally. Antibacterial serum was also relatively ineffective, but antitoxic horse or rabbit serum protected mice against intraperitoneal infection. This supported the view that the death of the control mice was due to a toxin, which could be prepared from frozen and thawed, dried and ground bacilli (Evans and Maitland, *J. Path. Bact.*, 1937, **45**, 715). On the other hand, the existence of some antibacterial immunity mechanism following phase 1 vaccination was suggested by a marked reduction in the number of organisms found after various intervals in the blood of mice infected by the intraperitoneal route. Unwashed phase 4 vaccines had a negligible effect. The part played by toxin in human infection was uncertain, but there was some evidence that it assisted the organisms to invade the tissues. So far no antitoxin had been demonstrated in convalescent sera, and in this respect the work of Strean (*Canad. med. Ass. J.*, 1940, **42**, 525) was still unconfirmed.

When virulent *H. pertussis* was injected into mice intranasally, a pneumonia was set up; the bacteria multiplied in the lung for about 14 days and then gradually died out. The value of vaccine against this intranasal infection could be demonstrated by some increase in the survival rate of the vaccinated group of animals and by a reduction in the bacterial counts of the lung. Antibacterial and antitoxic sera also controlled the lung infection, bacterial counts being often nil. A highly potent antibacterial and antitoxic serum (horse), concentrated by Harms, was on clinical trial; the results to date in three hospitals had been disappointing. This should not have been the case if the generally accepted views on specific prophylaxis and therapy were correct.

Extensive experiments by Proom and others on mice, and the collateral clinical evidence, did not indicate that any form of specific immunization was likely to be very effective against whooping-cough. In mice the protection obtained was erratic; in man also it was variable and, at the best, of low grade, the published results being reminiscent of those observed in mice. Research on the unsolved problem of the effective control of pertussis was not made simpler by the lack of uniformity of the cases and the recognized difficulties of both clinical and bacteriological diagnoses. In no other infection were clinical trials of a preparation more time-consuming.

Need for Large-scale Investigations

Dr. W. GUNN suggested that in the past too much had been made of the administrative difficulties likely to be encountered in whooping-cough prophylaxis. He did not think it essential that the antigen must have proved its worth before large-scale immunization was undertaken. In a disease such as whooping-cough, in which infectivity was known to be very variable, and for which no reliable test denoting immunity was available, only large-scale investigation could furnish the final answer. If parents were asked if they would like to have whooping-cough antigen combined with diphtheria A.P.T. in the same injection, few would refuse. Not only were reactions no greater than after each antigen given singly, but far from interfering with each other, each might enhance the immunizing properties of the other (Lapin, J. H., *Amer. J. Dis. Child.*, 1942, **63**, 225).

The only practical points of major importance were that injections should be begun at 5 to 6 months, or even earlier, instead of the more usual time of 9 to 12 months for diphtheria prophylaxis; two or three (depending on the degree of reaction to the first) injections at an interval of four weeks were given into the deltoid or vastus externus. A single injection of the combined antigen was desirable on starting school. He himself used combined A.P.T. and alum-treated whooping-cough vaccine without untoward effect, but as the inoculated group were all nursery children who shortly afterwards were transferred outside London, follow-up inquiries were difficult. For this reason standardized records, which accompanied the children as did ration books and identity cards, were essential for a proper statistical investigation. Special examinations, such as slide agglutination and complement fixation tests, should be made at intervals on random samples of the immunized as well as of controls, as latent immunization might be a disturbing factor unduly flattering the results unless allowed for in the final assessment.

The urgent need for active immunization should not obscure the need for other measures of control. Isolation by itself could effect little, as the damage was usually done by the time the diagnosis was made, although white blood cell counts and nasopharyngeal swabs often permitted diagnosis before the onset of the whoop, but human or rabbit hyperimmunized serum might prevent or attenuate an attack in known contacts, or help in treatment in early or severe cases. Active immunization might be begun at the same time, as in diphtheria control, as shown by Downie and his associates (*Journal*, 1941, **2**, 717), if the risk of the disease in a particular patient or group of patients was a grave one. In the very young the potential risk was always grave.

Dosage and Spacing

Dr. J. UNGAR said there were a number of factors responsible for the lack of confidence in this country in the value of active immunization against pertussis. Attention was now concentrated on an alum-precipitated vaccine which produced good antigenic activity in animals. Preliminary clinical trials showed that the vaccine properly administered was innocuous. An important factor in getting a proper response from pertussis immunization was the dose. The total dose recommended in clinical tests in the U.S.A., which proved successful, was in the case of Sauer's vaccine about 100,000 millions, or 30,000 to 40,000 millions for alum-precipitated vaccine. The proper spacing of the doses had a bearing on the result of immunization and the interval recommended was three to four weeks.

Another factor which allowed of a more optimistic approach was the evidence now available of the reliability of animal tests to determine (*a*) the virulence of the strain used to safeguard the full antigenic value of the vaccine, and (*b*) effectiveness of the antigenic action of different products. Some workers used mice extensively, employing either the intranasal, intratracheal, or intracerebral route for testing the effect of live cultures, and the intraperitoneal route for testing toxicity. The rabbit was a more reliable test animal, on which both components of vaccines—antibacterial and antitoxic—could be evaluated. Combined tests on mice and rabbits would help to differentiate between effective and less effective vaccines. More evidence was needed to show the part played by pertussis toxin in the pathology of experimental pertussis in animals and the usefulness of including the toxic fraction in existing vaccines. The pertussis toxin differed in some respects from usual exotoxins, and clinical proof was still needed of the value of antitoxic serum. Laboratory evidence indicated that the toxic fraction in the live bacilli had a specific effect in animals which was counteracted by antitoxin.

It was now recognized that the optimal time to immunize was in the first half-year of life, preferably at the age of five to seven months, and it took about three months for the immunity to be well established, depending on the type of vaccine used and the intervals between the doses. Serum treatment (convalescent, hyperimmune, or animal) had proved its value in prophylaxis of contacts in the first six to seven days of the incubation period. In the treatment of severe cases of whooping-cough, reports were mostly unfavourable. The value of large-scale immunization was estimated by comparing the communicability rate in the immunized and the control groups and the respective fatality rates. As statistics showed that higher death rates and fatality rates occurred in more densely populated districts, test trials in the larger boroughs would help to elucidate the merits of immunization against whooping-cough. It was encouraging to read the favourable report of the Council of Pharmacy and Chemistry of the American Medical Association and the results of the pertussis immunization programme of the Boston Health Department, which indicated that prophylactic treatment conferred immunity on some children and partial immunity on others, such as might occur following whooping-cough. The incidence of pertussis was lowered after immunization with adequate doses. The attack rate was lowered in the immunized, and the disease ran a milder course.

The Ministry of Health has issued a circular on the disposal of surplus equipment held by local authorities for the Ministry's emergency services. This asks for reports on action already taken, and gives further instructions about disposal of residues.

Correspondence

Belgian Surgeons' Acknowledgment

SIR,—In May of this year the Association of Surgeons of Great Britain and Ireland invited to their annual meeting a number of French and Belgian surgeons. In the name of the Belgian surgeons I wish to tell our British friends and colleagues how much we have appreciated the opportunity to see their work, and how touched we all were by their friendly and warm welcome.

The meeting we attended at the invitation of the president, Sir Max Page, was a brilliant success from the scientific point of view. In meetings, demonstrations, and operations, in official and private entertainments, we made fresh contacts which we hope will be the beginning of a more intimate association and closer collaboration between our country and yours.

The British Council, which misses no opportunity to help, had arranged to extend our visit to other centres, and owing to the kindness of Prof. Harry Platt of Manchester, Sir Hugh Cairns at Oxford, and Prof. J. R. Learmonth of Edinburgh, we saw in these centres beautiful work of the same high quality as we had seen elsewhere.

Such stimulating visits are of the greatest possible interest for the future, and we wish formally to express our admiration and thanks, not only to our colleagues and friends, but also to the university authorities, the Royal Colleges of Surgeons of England and Scotland, and the British Council. We hope we shall meet again often on both sides of the English Channel. —I am, etc.,

FRITZ ALBERT,
Professor of Experimental Surgery,
University of Liège.

Population Statistics in Palestine

SIR,—I must congratulate you on the prominence you have given to Sir John Megaw's letter (June 29, p. 994) on the population of India and hope that its weighty arguments will be properly considered. As population statistics are often ignored, the following recital of events in which I played an active part at the end of the 1914–18 war may help your readers to realize how important is the information they can give.

As part of my work as medical officer in the Palestine Military administration (O.E.T.A.) I had to introduce anti-malarial measures in my district—about a third of the country—which were later extended to the whole area. As a result of this work we were not only able to reduce almost to vanishing point the death rate from malaria but also, for the first time, to get reliable statistics of the birth rate. This proved that in some parts of the country the birth rate was no less than four times the death rate. This phenomenal condition of affairs then prevailing is by now generally recognized by demographers. What is not so generally recognized is the political implication of the phenomenon.

Largely on my initiative a memorandum was prepared for the incoming civilian administration giving definite facts and figures which showed: (1) The extraordinarily rapid natural increase of the Arab population which would certainly tax, and probably overtax, the resources of the country, and lead to scarcity and unrest. (2) That the Arabs themselves were naturally unaware of this increase and that if the immigration of Jews were allowed they would also naturally jump to the conclusion that the famine conditions were due to this extraneous increase in the population. (3) That agrarian riots were likely to follow and that these would be directed against the Jews, and that violent anti-Zionist passions would be aroused which could perhaps never afterwards be assuaged; and therefore (4) That in the interests of Jewish immigration it would be wisest to check immigration until Palestine had recovered its power to absorb more people.

I have very good reason to believe that this memorandum was actually presented to the civilian government but that the orders from London were that immigration was to go on. It did, and within two years riots occurred in Jaffa as predicted and immigration had to stop—but only when that bitterness of feeling had been generated which has poisoned Palestine and

world politics ever since. A better appraisal of the importance of the population statistics which I and a few others had so carefully prepared, together with an indication of their bearing on the political situation, might have changed the whole course of international relations in the Near East. I hope and pray that our politicians to-day will not display the same indifference to vital statistics as they did in Palestine twenty-six years ago.—I am, etc.,

Cheshire. W. N. LEAK.

The "Intractable" Vesico-vaginal Fistula

SIR,—With reference to Prof. Chassar Moir's letter (May 18, p. 774), I should like to support him in his denunciation of colonic transplantation of the ureter as common practice for the cure of urinary fistula. A point on which one has to disagree with him is his impression that fistulae can invariably be cured by vaginal operation. One disagrees in spite of his praiseworthy triumph in curing 30 consecutive fistulae by the vaginal route. His success, however, shows what can be done. A further statement that Mahfouz Pasha[1] cured 95 of his last 100 cases is incorrectly referred to Mahfouz's 1938 article. It is possible that Mahfouz may have made a personal statement to this effect when he gave his lecture at the British Postgraduate School; and, if this high cure rate is substantiated, Mahfouz's triumph must be unparalleled if the nature of his material is taken into account.

I have done nearly 100 operations for vesico-vaginal fistula in the Bantu, and I have at no time had more than six consecutive successful operations. Two complications which militate against success are extensive loss of vaginal tissue and loss of the urethra. Inaccessibility of the fistula can be a serious problem, but this can usually be overcome by patience. All our fistulae occur in the Bantu, who have usually had no trained attendant during parturition, and in the difficult case there is so extensive a loss of vaginal tissue that grafting is required to cover the outer aspect of the bladder suture. I have never failed to close the hole in the bladder adequately, but difficulty in bringing the vaginal edges together has led to failure repeatedly. I believe that we shall succeed now with skin grafts, and the nylon suture—even for the bladder—and local penicillin will make a 90% cure rate possible. For the average case good nursing is more important than good surgery, and non-European hospitals in this country are still so overcrowded that intensive nursing care remains beyond our reach.

At the Johannesburg Non-European Hospital we have resorted to ureteric transplantation in some cases of fistula. Vaginal operation has always been attempted first, and in the cases regarded as frankly inoperable the degree of pelvic inflammation present has usually been found to preclude transplantation. Our impression is that the vast majority of cases in which colonic transplantation of the ureter is possible could without difficulty be cured by the vaginal route. In this respect, therefore, one is in agreement with Chassar Moir. But urinary fistula in the Bantu can be a formidable condition. As parturients, these women are primitive and independent, and in the conviction that death is the alternative to spontaneous delivery they persevere in labour in a manner which is unknown amongst Europeans. Fistula arises not because of some small error, as in the European, but because of a second stage which sometimes persists for days. Very severe trauma results, and this is accompanied by the pelvic inflammation which we have found present in attempting to perform ureteric transplantation.

In 1938 Mahfouz reported that Egyptian midwifery had improved and that severe labour trauma was diminishing. Even during the eight years that I have been observing these cases a change has become apparent. Bantu women living in or near towns avail themselves of midwifery services, and cases of incontinence come in mainly from the outlying country. Before the war I seldom saw a fistula case in possession of a cervix, but cases with cervix and a vagina of reasonable mobility are now frequently seen.

This indicates that the average type of urinary fistula occurring in a particular region must be assessed before operability and cure rates are analysed. Counsellor[3] in America does not think that these cases offer a serious problem, but analysis will show that the series in Rochester contain a high proportion of post-operative fistulae, which indeed should present difficulty to no surgeon; Moir has had phenomenal success, but in Britain where obstetrics has reached its highest peak; Mahfouz[2] cured 86.5% in Egypt in 1929, but he eliminated from his series certain cases and counted colpocleisis under his cures. In South Africa we hope to have 90% of cures in Bantu postpartum fistulae before long. I have until now considered Sims's achievement of 74% cures in 312 cases as the most outstanding in this field of surgery; but if Mahfouz cured 95 cases out of 100 he has gained the summit, for no man will cure more than this percentage of any large series of patients presenting themselves with urinary fistulae.—I am, etc.,

Dept. of Obstetrics and Gynaecology, Johannesburg. O. S. HEYNS.

REFERENCES

1 Mahfouz, N. (1938). *J. Obstet. Gynaec.*, **45**, 405.
2 —— (1929). Ibid., **36**, 581.
3 Counsellor, V. S. (1942). *Surg. Gynec. Obstet.*, **74**, 738.

SIR,—Prof. Chassar Moir must be congratulated on his sequence of 30 cures. However, his criticism of Dr. Mackay's views (April 27, p. 650) cannot be allowed to pass unchallenged. I refer in particular to the following: "I deplore the pessimistic impression conveyed in Dr. Mackay's report regarding the curability of vesico-vaginal fistulae, and the implication that transplantation of the ureters is an operation frequently required." And, "In view of this satisfactory experience with the vaginal operation I disagree with the pessimism so often expressed."

It is obvious to those "in the know" that Prof. Chassar Moir and Dr. Mackay are discussing different clinical pictures, and anyone with experience in the Bantu native reserves will easily assess the different aspects of the problem. Over a period of ten years I have seen at least eight cases in which the only solution was uretero-colic anastomosis. This is not surprising when one realizes that "second stages" lasting three, four, and five days are not unknown.

I entirely agree with Prof. Chassar Moir that many surgeons take the easy way out and that uretero-colic anastomosis is carried out too often. It must be emphasized that transplantation of the ureters must be regarded as a sign of surgical failure as far as the fistula is concerned, and must only be used as a last resource. Three attempts to cure the fistula *without any improvement* is the earliest indication which should be accepted. With these criteria I have found it necessary to do eight transplantations over a period of six years. In the native reserves I would regard a cure rate of 75% as bordering on the miraculous, particularly in districts where the witch doctor practises his crude primitive obstetrics.

While congratulating Prof. Chassar Moir on his excellent and very encouraging work, I must express sympathy with Dr. Mackay's alleged pessimistic outlook. This, however, must not prevent us from looking ahead, and doing all we can to improve our techniques and conditions of work, and aiming at the present apparent impossibility of 30 consecutive cures.—I am, etc.,

Non-European Hospital, Johannesburg. P. KEEN.

Rh Factors

SIR,—Dr. Wiener's paper (June 29, 1946) will doubtless provoke comment from the experts. I only venture to write as one of the many who, though not serologists, wish to understand this theoretically fascinating and practically important chapter in human genetics, and who thereafter may wish to teach it to others. The difficulty does not lie in understanding the genetic behaviour of a system of eight or more multiple allelomorphs, but in the fact that each gene, according to Dr. Wiener, or each compound gene, according to Prof. Fisher, determines not a single reaction but a complex and overlapping pattern of reactions. This is bewildering to those who have not become familiar with them in the course of laboratory work. I must admit that I found the story very heavy going until one day Dr. Race was kind enough to explain to me the new CDE scheme that Prof. Fisher had just devised. Illumination came almost in a flash. All the pieces of the puzzle fell neatly into place. Each gene is named according to the reactions it determines with the various antisera, which in turn are named according to the elementary antigens with which they react, anti-C, anti-e, etc., for in this matter Prof. Cappell's modification seems a desirable simplication of Prof. Fisher's Greek

letters. I have since had the opportunity of explaining the genetics of Rh, I think successfully, to medical classes as well as to individuals, and have no doubt at all of the excellence for teaching purposes of the CDE nomenclature. But when the rationale of Rh has been thoroughly grasped, facility in handling the genetic combinations makes a further step desirable—a single name for each gene complex. For these Dr. Wiener's original symbols for the antigens seem admirable, and, of course, when mastered serve as a key to the literature. It is simply a matter of knowing that, for example, R_o is an abbreviation for the compound gene cDe, or r for the gene cde. The red cells of an individual possessing these two genes will react with anti-D, anti-c, anti-e, and also, when it is discovered, with anti-d, but will not react with anti-C or anti-E. There are not many combinations to learn and one finds that they are soon memorized.

I feel that I cannot let this opportunity pass without paying some tribute as an onlooker to the brilliance of the serological researches both in the United States and in this country. I have had the privilege of being in touch with the Galton Serum Unit since its inception and also the privilege of enjoying a most stimulating visit to Dr. Wiener's laboratories in New York. But first-hand knowledge is not required in order to appreciate the quality of the work; the published papers of the past five years speak for themselves. It would not be easy to find many instances in biological research where progress has been so rapid, where so few mistakes have been made, where there has been so little to retract, where resources have been used so fruitfully. There may be differences of opinion about nomenclature and about theory, but the concordance of the basic observations has been striking. Sometimes an advance has been due to Dr. Wiener, Dr. Levine and their co-workers in the United States, sometimes to the late Dr. Taylor, Dr. Race, Prof. Fisher and their co-workers in Great Britain; but in either event there have come almost invariably immediate confirmation and further advance from the other side of the Atlantic. Visits to this country by the American workers would be very welcome to British geneticists.—I am, etc.,

London, S.W.10. J. A. FRASER ROBERTS.

The Thomas Splint

SIR,—The article by Prof. T. P. McMurray (June 8, p. 872) on "Thomas and his Splint" is of great interest, but the reasons for the spectacular reduction in the mortality of fractured femur cases in the third year of the 1914–18 war are not very clearly brought out. It was not entirely the use of the Thomas splint as a method of treatment in hospitals which caused the drop in the death rate. Other splints may not have produced such good end-results, but three out of five patients treated in them did not, in consequence, die. Surely it was mainly its use as a first-aid measure on the actual battlefield which resulted in the saving of so many lives. The deaths, which were mainly due to shock, nearly always occurred on the way to, or in, C.C.S.s, and during the battle of Arras in 1917, when the Thomas splint as a first-aid appliance was in universal use, the death rates in the group of C.C.S.s behind Arras dropped from about 75% to about 20%. Indeed, the fractured femur patients arrived in better condition than those with fractured arms, and this was not surprising.

To anyone who has applied a long Liston splint in a trench, and, at a later date, applied a Thomas splint in similar circumstances, the brilliance of the idea of using the Thomas splint as a first-aid measure will need no emphasizing. Who first had this idea, or whether it was a composite proposal, I do not know, but Gray and Max Page had certainly much to do with it, and by their enthusiasm stimulated others. By April, 1917, it is safe to say, there was not a stretcher-bearer in the 3rd Army who was not an adept at applying a Thomas splint. One other factor which played an important part, and must be given due credit, in the saving of the lives of severely wounded men, was the realization that, in general, chilling meant shock, and warmth and hot sweet tea meant the prevention of shock. And so we had the folding of blankets to make three do the work of four, the hot bricks in the sandbags at the R.A.P.s, and improvised hot-air chambers at each stop "down the line."—I am, etc.,

Control Commission for Germany. W. STRELLEY MARTIN, Lieut.-Col., R.A.M.C.

The Catheter and the Prostate

SIR,—Mr. Wilson Hey (June 29, p. 997) raises many points which should not be allowed to pass unchallenged. He states that "there are no more misleading statistics in medicine than those in connexion with prostatectomy." In this he is quite right, and it would seem that his statistics are as misleading as any, since he operates only on the wealthier sections of the community. It is certain that his statistics would show a very different complexion had he to deal with the average type of case entering a municipal hospital (a former workhouse), dumping ground for all the crocks from other hospitals and the surrounding district.

In the prostatic clinic in the Newcastle General Hospital, transurethral resection by the cold punch is the operation of choice, the reason being that in the poorest risk this operation offers the best chance of success. It is safer than even simple suprapubic cystotomy and has the advantage that the bladder is drained by the natural and safest channel—viz., the urethra. Moreover, the operation is as near ambulatory as possible, since the patient is out of bed the day after operation and is not in any way restricted because of an abdominal wound.

I note with interest that Mr. Wilson Hey's faith in his aseptic technique does not preclude routine "preparatory chemotherapy." Perhaps his faith is like that of Col. Bramble's padre who refused to pray for rain because the barometer was too high. Moreover, he is surely not serious when he suggests that a surgeon of the experience and distinction of Mr. Winsbury White does not do his prostatectomies aseptically.

When Mr. Wilson Hey suggests that the catheter should never be used in acute urinary retention he is on very dangerous ground. It must be the experience of every general practitioner that many such cases catheterized even once recover completely and end their days without any further trouble. It is dangerous teaching that all cases of retention should be submitted to prostatectomy. It is doubly dangerous teaching when one remembers that the patient is operated upon without even being examined and consequently without the formality of an accurate diagnosis before the bladder is opened. This is surely putting the clock back thirty years with a vengeance.

Mr. Wilson Hey's figures do not in any way represent mortality rates to be expected in the community as a whole. He does not deal with the grossly neglected poor. In the year 1945 in the Newcastle General Hospital the operative mortality was 13%, but no case was ever refused operation if there was even the faintest chance of recovery. Cystotomy was never done for drainage alone. Since January 1, 1946, 164 resections have been performed, with 8 deaths, giving a mortality of 4.87%. The oldest patient was 95 years; the average age at operation 72 years; the average age of fatal cases 72.6 years. There has been no material change in technique.

No, Sir; transurethral prostatectomy has come to stay, and will in time largely replace any other form of prostatectomy yet produced. It is associated with less physical and psychical trauma than any other form of operation.—I am, etc.,

Newcastle upon Tyne. W. E. M. WARDILL.

True Mediterranean Fever in England

SIR,—It may be of general interest to note a true case of Malta fever infection by *Br. melitensis* in this country.

The patient, a female aged 40, complained of having had a series of "chills" with slight rises of temperature for about fourteen days before seeking advice. On examination it was found that she had a mild pyrexia of 99° F. (37.2° C.), a slow pulse rate—66, a very furred tongue, and was constipated. She had a short irritating cough, and her chest showed rales at both bases, more marked on the left. She was put to bed, and on further examination nil else was found.

Her temperature then started to rise in steps, being one to two degrees higher at 8 p.m. than at 8 a.m. At the same time she suffered from intense headache, her cough became somewhat more marked, and her respirations were up to 18 per minute. Her pulse remained at 70. The highest temperature recorded was 103.8° F. (39.9° C.). After four days the temperature came down to 98.4° F. (36.9° C.) morning and night; she felt better, but had to have enemata to relieve a very severe constipation. On the eighth day her temperature started to rise again.

She now complained of fullness in the epigastrium, fainting if she got out of bed, and again severe headache. She then produced two

rigors, with increasing pyrexia, again up to 103° F. (39.4° C.). By this time my suspicions were aroused as I could find no clinical signs to account for such a marked rise in temperature. She looked typhoidal and was slumped in her bed with malar flush and a foul tongue. At this time I found she was tender to palpation in the left hypochondrium, and very tender when trying to find the spleen. A blood count showed a slight anaemia with white cells down to 4,700—polymorphs 88%, lymphocytes only 6%, monocytes 2%, eosinophils 3%, and basophils 1%. Urine: a slight trace of albumin; no pathogens.

The blood culture was negative. As I knew that the patient kept goats and milked them herself and drank the milk, I asked for a Widal for agglutination against *Br. melitensis* as well as the *Br. abortus* strain. The reaction to *Br. melitensis* was positive in only the low dilution of 1 in 25; reaction to *Br. abortus* was negative.

In view of the persistence of symptoms I made the provisional diagnosis of Malta fever and arranged with the M.O.H. for the goats to be tested. One goat had aborted six months ago and had been mated again. It did not produce kids, but did produce milk. This goat has now been found to be strongly positive to agglutination with *Br. melitensis*. The other goats in the small herd remain to be tested.

I believe this to be the second recorded case of infection in goats in this country. In view of the fact that, during the war, goat-keeping has increased by leaps and bounds for milk production, I consider that all goats used for milking should be tested once a year, and the owners registered.—I am, etc.,

Christchurch. E. F. HUNT.

Placement of the Disabled

SIR,—May I correct one point in your excellent leader of May 25 (p. 803)? The Act states that anyone who is physically or mentally handicapped is "to be put on the Register"—irrespective of whether he is doing suitable work or not. I understand that of the half a million people already registered the vast majority were actually in satisfactory employment at the time of registration.—I am, etc.,

Bedford. E. N. GRAHAM.

Shock Treatment of Bronchial Asthma

SIR,—Dr. E. Brauer's 1939 article on the above subject has travelled afar among medical friends and colleagues, yet has, though now tattered and torn, luckily always come home. It was a pleasure to see his return to print (June 1, p. 849) on the subject.

Administration of the contents of the ampoules is simplicity itself, and, in the small number of cases available here, not the least untoward action has been observed. For twenty-four hours the patient feels as if he or she has had a bad attack of influenza—nothing more. Out of 15 cases only one failed to show improvement. The rest have been, less or more, encouragingly benefited. The three earliest cases may perhaps be quoted, with a minimum of detail.

A miner aged 50, typically asthmatic for twenty years, had been off work for five years. Following the publication of Dr. Brauer's article, the patient was given a dose of "pyrifer" in September, 1939, another in November, and in late January, 1940, he asked for another dose "to clear me up for work." Following this he worked continuously for two and a half years till he died of pneumonia.

A youth aged 20, very keen to join the R.A.F. in 1939, despite the fact that he had been subject to asthma for eight years. Naturally he was "turned down in his medical" because of his chest condition. Two doses of shock treatment cleared him up astonishingly, and he asked for a third one, just before volunteering again, ten months after his first board. He was passed Grade I and was quite free from any breathing difficulty during his time in the Air Force. (This may of course be put down by the sceptical to Service conditions.) One slight attack came on while on long leave following a fractured femur, but he had another dose and has been quite free since.

A lady school teacher aged 25, asthmatic from 12 years of age. Two doses in 1939, and required no more till staying with friends in 1943. Her then medical attendant told her that "neither I nor any other medical man can do you much good." Her brother motored down for a further dose. Had she been at home she would have received the third strength, but, as the M.O. was very doubting, a repeat of No. 2, and Dr. Brauer's article containing full instructions, were sent. Reaction was, in this case, somewhat delayed, but no further treatment has since been called for.

A woman aged 55 (patient of a colleague who asked me to give "pyrifer"), troubled with asthma "all her life," showed no improvement whatsoever following two doses of No. 1 and one dose of No. 2. She reacted all right but nothing more.

Such, Sir, are reports on four cases treated in this practice by the "shock treatment for bronchial asthma." In another 11 cases the results have been more than encouraging, yet, with such a meagre number to go on, one felt diffident about rushing into print. But, as Dr. Brauer has returned to the subject, it is to be hoped that he will now give to the profession a summary of the results obtained in his so much fuller experience. The subject would appear to be one which calls for widespread investigation and trial. So far as this practice is concerned, both patients and G.P. desire to express to Dr. Brauer their thanks for bringing to their notice a method of treatment which has yielded most acceptable results.—I am, etc.,

Kirkconnel, Dumfries-shire. BOWMAN EDGAR.

National Research into Tuberculosis

SIR,—I agree with the various writers on the need for such research. I agree with Dr. J. St. P. Cowell (June 22, p. 964) that the matter concerns every medical man, but I do not think the profession should be so greatly blamed. There is a greater need for public interest in the means of prevention and treatment. The practical aspect comes to the erection of an Institute for Tuberculosis Research. Why wait for the Government? Why should the profession itself not create the Institute, and appeal also to the public? Let it be the medical profession's institute for tuberculosis research. Without further ado I am willing to receive a simple statement of support to the proposal *and* a willingness to subscribe towards the project some sum (nothing more at present). If the proposal and amount that would be subscribed is evidence of substantial support within a month I could then advise all the supporters and find out when they could meet to decide all necessary steps.—I am, etc.,

A. G. NEWELL,
Blyth, Northumberland. Medical Officer of Health.

Migrainous Headaches

SIR,—I have read with considerable interest Dr. Wilfred Harris's paper on migrainous headaches (May 18, p. 754) and Mr. Cecil Tivy's letter (June 22, p. 964). I agree wholeheartedly that frequently migraine is not given either the sympathy or treatment it deserves. Patients are, in general, classified by their practitioner as incurable—and so informed!

In a large number of cases this is not true; many can be relieved by a combination of endocrine therapy, desensitization with prostigmin, or the ingestion of urea in varying doses. Such therapy, to be successful, must be applied with knowledge and persistence; but it is far less drastic than interfering with the Gasserian ganglion and, one feels, should be tried in all cases of true migraine before irrevocable methods are undertaken. This treatment has the advantage of doing no possible harm; while gratifyingly often the patients, to their surprise and intense relief, if not completely cured, are at least enabled to look forward to a tolerable future.—I am, etc.,

London, W.1. NEVIL LEYTON.

Effect of Sweets on Teeth

SIR,—My attention has been drawn to the letter from Miss Dorothy M. Richardson (June 29, p. 1010) criticizing my study of the effects of boiled sweets and chocolate biscuits on dental caries activity, cited by Dr. H. E. Magee in his Milroy Lectures. As stated in my original paper (*Lancet*, 1946, **1**, 646), both sweets and chocolate biscuits were given to counteract this type of criticism. The composition of the latter was as follows:

Biscuit.—Wheat flour 48.8%; total sugar 24% (reducing sugar 3.25%); fibre 7%; fat 17.2%; water 3%. The "reducing sugar" consisted of glucose, laevulose and maltose.

Chocolate.—Sucrose 43.5%; fat 32%; cocoa solids 24.5%.

I can assure Miss Richardson that the biscuits, at least, were certainly not "non-adhesive." Both chocolate and biscuit portions remained in the tooth fissures and interdental spaces for a considerable time.

In addition, the children were given their usual sweet ration, in which chocolate cream and fudge were included, while their general diet contained more than 50% of carbohydrate in the form of sugar, jam, bread, potatoes, oatmeal and breakfast cereal.

Finally, I would refer Miss Richardson to the *British Medical Bulletin* (1944, **2**, 225) for a brief account of some of the fundamental reasons for questioning the validity of the carbohydrate-fermentation theory of dental caries.—I am, etc.,

London, S.E.5. J. D. KING.

Book Reviewing

SIR,—Is it not time the *B.M.J.*—and indeed other medical journals in this country—conformed to the practice of their contemporaries in other literary fields in publishing the names of book reviewers? I presume that you endeavour always to enlist the services of an expert on the subject-matter under review. But how are your readers to know this? The position at present is that magisterial and pompous comments are sometimes made by reviewers who may or may not be experts (so far as *we* know), and who are able to indulge their preferences and prejudices, if not indeed a little personal malice, under the cloak of anonymity. I am not suggesting that indifferent work should be condoned; any more than that writing for the sake of writing should be encouraged. But let us have the reviewer's name. We can then judge *how* "expert" he is; we can, if necessary, challenge his criticism, and we can give ourselves the mental exercise of assessing the relative merits of author and reviewer!

It is not easy, I know, to write a balanced review. It is perhaps a help to be thoroughly familiar with the author's training, his intellectual ability, and his clinical day-to-day work. This is unfortunately not always possible. One is so apt to allow judgment to be influenced by such factors as personal prejudices for this or that method of treatment, or this or that method of presentation of a subject. But I think it is important to try to be objective, to be helpful both to the author and to the public, and to avoid harshness. In the past year or so I have felt that some orthopaedic critiques have been scarcely fair either to potential readers or to the author—a view shared with me by many distinguished orthopaedic surgeons. I will mention one example. A book on *Injuries of the Knee-Joint* has recently been written by Mr. I. S. Smillie, founded on a war-time experience of some 5,000 patients with complaints directly related to the knee-joint. In a modestly worded preface Mr. Smillie explains the background of his book and the difficulties under which it was written. He is careful to make no extravagant claims—and this admirable principle is followed throughout the book. Having had the privilege of seeing much of Mr. Smillie's work during the war, and accounting it *on results* (in terms of fitness for return to military service) as easily among the very best accident surgery in Britain, I read his book with a real knowledge of the man and his work. Though I do not agree with all his opinions, I find the book most stimulating and informative; I made haste to present copies to some visiting foreign colleagues; and I consider that another valuable monograph has been added to my orthopaedic library. There are, of course, faults in the book, but is there any book in which to someone's way of thinking there are no faults?

A review of this monograph was published in your edition of June 1. It reads like a Victorian headmaster's address to his pupil, or a would-be dictator to his underlings. It is patronizing, pompous, and in my view quite unjustifiably censorious. Amongst other alleged vices, Mr. Smillie is taken to task for lack of proper statistical analysis. The reviewer, a few sentences later, refers to one of Smillie's operations as "a procedure of dubious value," but he (the reviewer) quotes no statistics of his own to support his pontifical dubiety. We are assured towards the end that two of our colleagues are neither anatomists nor physiologists. Is this true even if it is relevant?

I find it hard to believe that a book review which concentrates only on the faults, or in the opinion of the reviewer the faults, is helpful to anyone. An anonymous public arraignment of this type must be discouraging to any author of any age who has worked hard and thought much, and who has produced a book which many of us value. Fortunately Mr. Smillie has the ability and the resilience not to be unduly perturbed. But how much better it would have been if your reviewer had been more restrained—and he probably would have been if he had had to append his name. A personal letter of friendly criticism to the author would, I am sure, have been welcomed as a help in improving the book for its next edition.

Another point—unless the names are appended how do we know that the *B.M.J.* is not selecting reviewers who, in the words of Prof. Robert Platt (*Manchester Guardian*, June 1), when referring to the gentlemen recommended by the British Medical Association for the recent elections to the General Medical Council, "are best qualified to represent the views of those who have already retired from practice"?—I am, etc.,

Manchester. H. OSMOND CLARKE.

Rectal Cancer in Sisters

SIR,—We should like to reply to Prof. M. Greenwood's letter (June 22, p. 965), in which he criticizes our own of May 25 (p. 814).

Prof. Greenwood takes us to task for commenting on the statistical conclusions that Dr. R. E. Rewell attempted to draw from one quoted case, and this he does on the grounds that Dr. Rewell's hypothesis was reasonable. Nowhere in our letter did we criticize this hypothesis, and our remarks were directed solely towards drawing attention to the danger of misusing statistical methods (and, more especially in this case, statistical jargon), as evidenced in the last paragraph of Dr. Rewell's communication. Prof. Greenwood himself has been moved to write: "Medical papers now frequently contain statistical analyses, and sometimes these analyses are correct, but the writers violate quite as often as before the fundamental principles of statistical or of general logical reasoning." (*Lancet*, June 11, 1932). Dr. Rewell had indicated that from the evidence he adduced a probability could be assessed for his hypothesis, and the impression was certainly given that this probability exceeded one half. In fact, no such probability could be calculated from the data, and it seemed reasonable to point out, especially in a journal catering for non-mathematical readers, that the statistical support claimed by Dr. Rewell was, to say the least, somewhat flimsy, and not such as to warrant any confident conclusion.

In fact, as Prof. Greenwood implies, the *a posteriori* probability would only warrant entertaining the hypothesis if the *a priori* probability were appreciable—a point which few readers can be expected to have grasped. It would therefore appear to be of value to consider the *a priori* probability in the actual cases quoted by Dr. Rewell. It may be recalled that the original article concerned two sisters—one had multiple telangiectases, the other multiple polyposis, and both died young of carcinoma of the colon. There is no recognized connexion between multiple telangiectases and carcinoma of the colon, or between multiple telangiectases and multiple polyposis, and the article contains no recorded cases showing a connexion. Yet in spite of this, and without any argument from general pathological principles, the author states: "Carcinoma of the rectum in siblings of this age is so rare that one *must* conclude that there *is* some connexion between the three conditions." (Italics our own.) This has nothing of the tentative nature of the statements that Prof. Greenwood attributed to Dr. Rewell.

We do not believe that Dr. Rewell forbore to comment on our letter because he was reminded of Bacon's essay, "Of Seeming Wise," but we are constrained to ask who it is who "seems too wise." Prof. Greenwood has answered that question better than we could do: ". . . it would be silly to . . . proclaim that his [the doctor's] intimate knowledge of the facts puts him above the reach of those vagaries of chance which 'mere' statisticians emphasize." (*Journal*, Jan. 26, p. 119).—We are, etc.,

P. J. HILTON.
London, N.W.8. S. M. HILTON.

The Hypochondriac's Treatment

SIR,—Dr. E. D. Granger (July 6, p. 27), who so mildly rebukes Dr. Summerskill for her reported remarks, is in my opinion perfectly correct. I would perhaps have been a little harder. A so-called malingerer whom I recently had as a patient died

a few months later from prostatic carcinoma. He had been thus labelled because of his whining complaints and the vagueness of his symptoms. His complaints were chiefly of flitting and sometimes severe pains in the bones, especially in his spine in the lower lumbar and sacral regions. I managed to elicit a fact which the specialists in the hospital had overlooked or had not noticed—i.e., a definite frequency of micturition, especially during the night, and as he was a man of 60 I began to suspect the prostate was diseased. Although he had been *x*-rayed in hospital it had been a little early to pick up the telltale deposits in the spine and pelvic girdle, but an *x* ray taken by myself and only a month after leaving the hospital revealed the true nature of his "hypochondria," for he died from the disease less than two months later, relieved from his very acute suffering only by large doses and continuous administration of morphine.

In my ten or eleven years of experience of general practice I have come to respect the feelings of patients the more and I have learnt not to dismiss their condition as "just another case of neurosis" without a very thorough search into the whole case-history and a still more thorough examination of the patient. In any event, under the stress of modern life the nervous system of the individual is subjected to strain his forebears had rarely to bear, and the fact that some of us become hypochondriacs is not surprising, and indeed they are people much to be pitied and people who should be most carefully handled. The handling of them is a skilled job requiring much patience. It is not surprising that many doctors simply shirk the job.

Dr. Summerskill's remarks bear not a little trace of the doctrines of Nazism, for it is not a very long jump from the trend she desires in the treatment of the hypochondriac to the purification of the race by the forced segregation of misfits and their quiet removal from the world as carried out only too efficiently under the Hitler regime. Perhaps she does not see the dangerous road along which her socialistic beliefs are driving her.

How much we doctors prize our present freedom of thought and action in the carrying out of our duties! How much we are likely to kick under the dictation of a more and more autocratic system of government we may learn when it is too late and long past worrying about. There is no use pretending, for we are in a trap from which there is no escape, and that trap is largely of our own making, because if from the inception of the so-called negotiations preparatory to the introduction of a State scheme of medical practice we had stuck to our guns and had nothing to do with a system of medical practice which the majority of us are going to detest, we could have fought against its introduction the better. But we compromised and accepted in part, and when the softening-up process was in an advanced stage under the Coalition Government it was the easier for Mr. Bevan and his satellites to press further and more drastically and even to drop the pretence of negotiation. One has only to read the weekly reports of the Committee stage of the Bill to realize how far-reaching will be the effect on the lives of all doctors of its passing into law.—I am, etc.,

Strathpeffer. KENNETH I. E. MACLEOD.

Health Service Bill

SIR,—Mr. G. H. Urquhart (July 6, p. 26) states an admirable case. I have just attended a local meeting of the Labour Party, sponsoring a "medical brains trust." Factual ignorance, overweening self-assurance, desire for domination, and disease-consciousness were well marked; class-consciousness was present in the trust. Salesmanship was good, the particular line for the day being group practice in health centres with doctors working in shifts and maintaining a high standard of efficiency under mutual supervision!

The immediate corrective to adopt, for those of us who believe the above symptom complex to be of bad import, is quite clear. Broadcast the objects and powers of the B.M.A. (see Constitution). The Association was formed "*to promote the medical and allied sciences,* and to maintain the honour and interests of the medical profession." In emphasizing the words in italics the major part of the *British Medical Journal*, the six quarterly journals, and some thirty publications, entirely non-medico-political, should not be forgotten, nor should the Association work on fractures, physical education, first-aid training, and hospital planning, etc. These things and the B.M.A. policy on the present Health Service Bill should be kept daily before the public eye through the public relations committees, the Press, and the political parties now in opposition. If we all lend a hand *and keep it up* we shall win the battle for independence.—I am, etc.,

Birkenhead. R. W. L. PEARSON.

Powers and Procedure of G.M.C.

SIR,—It is with much interest that the profession will read of the suggested reforms of the powers and procedure of the General Medical Council which have been drawn up by the three defence bodies (July 6, p. 21). It is not before time, and I am sure without exception that the profession will welcome a "trial" before a body which will carry out its judicial work in accordance with the observance of the rules of procedure, etc., as administered in the other courts of law. While these suggested reforms as put forward are indeed excellent, there are in my opinion one or two matters which have been overlooked.

In the first place there ought to be allowed to a doctor legal representation at *all* proceedings where the doctor's professional conduct is under review. At the present time, when a medical man who has had his name erased from the *Register* applies for reinstatement, the procedure is at present that he makes his application for such in writing. This is considered by a committee without either hearing him or allowing him to be represented by an advocate, and in due course their decision is communicated to him, or they may call upon him to appear, but I understand that as it is at present the doctor cannot appear by an advocate. It is well known that the presentation of any case sounds entirely different if the defendant appears either in person or, better still, if he appears with counsel.

Next I would advocate that the rules of evidence be strictly adhered to. All hearsay and other evidence not received in our other courts be excluded. I would suggest the time in which a notice of appeal can be lodged be extended to fourteen days instead of seven as at present suggested. The right of appeal should not be confined to one on a point of law alone but should be allowed on similar grounds as allowed in the other courts. Further, I would suggest that the legal assessor be a barrister who also has a medical degree, of whom there are several practising law. Or, alternatively, a chairman with the dual qualification be appointed who would be able to control the proceedings. This chairman need not be a permanent appointment, and would merely act as legal assessor and refuse or admit evidence according to law, etc., etc. He would not be a member *ex officio* of the council.

All documents for or against the doctor charged should be proved, and "notice to produce" but not "to admit" should be permitted. The tribunal to decide if the document is a privileged one. If a charge is found not proved costs against the complainant should be awarded, and such costs should be recoverable as in civil law. Besides erasure and censure, as at present permitted, the tribunal should have power to impose a fine if they were of the opinion that such would meet the case. At the present time a lesser tribunal—a panel committee—has power to fine a medical man for "over-prescribing."

I, fortunately, have never been before the General Medical Council, but while practising medicine I always felt that if ever such should be my fate I would writhe at the thought of being "tried" by a body of laymen who sat as a judicial tribunal and whose procedure was different from that of a court of law.—I am, etc.,

C. J. DE VERE-SHORTT, M.D.,
Barrister-at-Law.

Temple, E.C.4.

SIR,—It is possible to swing the pendulum to the other extreme and claim, as some have done, that if the Hennessy case had been tried in the first instance before a judge and jury all would infallibly have gone well for Dr. Hennessy. Mr. Justice Humphreys in a very recent book entitled *Summing Up* (extracts published in the *Sunday Graphic*) has given instances of miscarriages of justice, indicating that these errors are most likely to occur when perjury is committed by a woman alleging sexual offences or the distribution of obscene libels.

In the Swan v. Gooding trials, Miss Swan completely took in three juries and at least two judges (Mr. Justice Bailhache and Mr. Justice Avory). Mrs. Gooding was sent to prison, and for this miscarriage of justice the Treasury paid £250 in compensation to Mrs. Gooding when the two convictions were quashed on July 26, 1921. I quote from Mr. Justice Humphreys' article in the *Sunday Graphic* (March 17, 1946).

"In the restricted circle in which she lived and moved, Edith Swan was a real public danger.' Are we then to understand that such a woman can by ingenious perjury bring about a serious miscarriage of justice as and when she pleases? Are innocent people in real danger of being wrongly convicted through no fault or omission on their part, but according to the whim of a mentally unbalanced female? I think not, though I should be sorry to prophesy that such a case will not occur again, as in truth it has happened before."

It has occurred again in the Boyanton v. Hennessy case before the G.M.C. It occurred in the past in 1912, and again in 1913, when Mrs. Johnson of Redhill was twice convicted and sent to prison for sending letters of a threatening and obscene nature to a Mr. and Mrs. Woodman, Mrs. Woodman being in fact the source of the libels and a ready perjurer. Here again the Treasury awarded Mrs. Johnson £500 compensation when Mrs. Woodman was eventually convicted of perjury and other offences in February, 1915, and sentenced by Mr. Justice Horridge to eighteen months' imprisonment. (*Sunday Graphic*, May 5, 1946.)

Why did the G.M.C. go astray in the Hennessy case? It is not enough to say that the doctor should have provided additional evidence in order to save himself. Mr. Justice Humphreys' comments on the Gooding case are worth quoting as they are applicable here:

"The case of Mrs. Gooding, always more or less in my mind for twenty-five years, has hardened into a principle which I found rather vaguely expressed in the books I read as a pupil—namely, that it is too dangerous to accept as satisfactory evidence upon which to convict in any sexual case the statement of the woman concerned unless there is other evidence tending in the same direction. Further, that this rule should never be relaxed merely because the prosecutrix in the witness-box behaves like an angel and looks like a madonna."

This is the first lesson to be relearned from the Hennessy case. It should, I think, be inscribed on a plaque somewhere in the halls reserved for trials, where the jurors and judges can refresh their memories. The second lesson is that no compensation has been paid to Dr. Hennessy for the miscarriage of justice he suffered at the hands of the G.M.C. May one add another invocation to the well-known *Doctor's Litany*,

"From forgetful judges, gullible juries, and hasty G.M.C.s,
Save, O Lord, us poor M.D.s."

—I am, etc.,

Slough. N. C. HYPHER.

Re-education of Germany

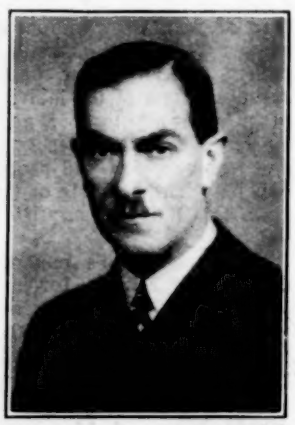
SIR,—Some of your readers may have read with the same sense of indignation as myself the statement recently published in the *Times* that a German physician in the British Zone has just been sent to prison for a year "for failing to stand when the British National Anthem was played at the conclusion of a concert." I do not know this doctor. I do not know whether he was a Nazi, or whether he was a credit to his profession, but it seems to me that a sentence of this kind ought not to go without some expression of protest from the British medical press. I do not mean by this that the fact that the accused was a doctor entitles him to special privilege, but rather that because of it this lunatic sentence may bring home to us a little more cogently the sort of thing which is being done in our name. Medical men have had a good deal to say about the re-education of Germany: if this is how the responsible authorities consider that re-education can or should be conducted, perhaps it is time that they were more intelligently advised. Faced with a problem of public health, they have acted on the whole competently and creditably. If the goodwill accumulated by those means is to be dissipated at the psychological level by actions as stupid and as reminiscent of Hitler himself as this one, perhaps we have a duty to criticize at least as forcibly as anyone else.—I am, etc.,

London, S.E.23. ALEX. COMFORT.

Obituary

T. IZOD BENNETT, M.D., F.R.C.P.

The sudden death of Dr. T. Izod Bennett, which took place at his home in Hill Street, Mayfair, on July 10, on the eve of his fifty-ninth birthday, removes a figure of much originality and distinction from British medicine. He might well have looked forward to several more years of achievement. His work, especially at the Middlesex Hospital and the Royal National Orthopaedic Hospital, the two principal institutions he served as physician, was highly regarded by his colleagues; he was a recognized authority on disorders of the alimentary tract and on metabolism in health and disease; as a teacher he was unusually gifted; and he was the author of many books and papers which bore the impress of a careful and logical mind.



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Thomas Izod Bennett was born in July, 1887, at Christchurch, New Zealand, and was educated there, coming to London for his medical training, which he took at Guy's Hospital. He qualified in 1912 and graduated M.B., B.S.Lond. in 1914. After holding various house appointments at Guy's, he joined the R.A.M.C. at the outbreak of war in 1914, and served on the Western Front for two years as medical officer to the 8th Battalion of the North Staffordshire Regiment. Later he was physician to No. 54 Casualty Clearing Station, holding the rank of major. After the armistice he returned to Guy's as medical assistant and demonstrator in physiology, a post which permitted him to resume the researches in internal medicine which had been interrupted by his war service. In 1920 he took the M.D. of the University of London and in the same year became M.R.C.P. He was elected to the staff of the Middlesex Hospital as physician with charge of out-patients and as tutor to the medical school. He was now well established in private consulting practice. In 1921–3 he held a Beit memorial fellowship for medical research. In 1928 he was Goulstonian lecturer to the Royal College of Physicians, of which he had meanwhile become Fellow. His subject was "Some Problems of Nephritis," and the lectures were subsequently printed in book form. He was dean of the Middlesex Hospital medical school from 1929 until 1934.

Other posts which Izod Bennett held were those of senior physician to the Stoke Mandeville Hospital, consulting physician to the Cane Hill Mental Hospital (L.C.C.), St. Columba's Hospital, London, the Faversham Hospital, and St. Luke's Hostel for the Clergy. He served as examiner in medicine for the University of London, and later, from 1940 to 1944, for the Royal College of Physicians. He was a prominent member of the Association of Physicians and a frequent contributor to its proceedings. For over a quarter of a century he belonged to the Medical Society of London and the Royal Society of Medicine, and he was President of the Section of Medicine of the latter body during the session just closed. One of the characteristics of Izod Bennett, observed alike in his writings, in medical discussions, and in the lecture theatre, was the carefulness and precision of his language. He was impatient with anything slovenly in the presentation of facts or ideas; he would not tolerate it in his students or in himself, and his contributions, even the slightest of them—even a few remarks on the spur of the moment—were models of logical thinking and expression. He was the author of numerous books and papers dealing mostly with alimentary and renal physiology and pathology. His first considerable literary work, on the stomach and upper alimentary tract, appeared in 1925; a small book by him on the treatment of

diabetes appeared in 1931, and he was a frequent contributor to the medical journals.

Izod Bennett was known to his friends as a man of most kindly disposition who curbed natural irascibility under a calm manner. Thorough and methodical in going into a case, he never forgot that the patient was a person in need of help and sympathy. Colleagues who came under his professional care will recall his thoughtful study of symptoms in relation to their background and his unobtrusive acts of good nature. He spoke French fluently and knew Spanish, and often put himself out to entertain medical visitors from the Continent. His indoor recreation was a rubber at bridge before dinner, and the fellow-members with whom he regularly played in the card-room of his club noticed with much concern that his health was failing in recent weeks.

Dr. DOROTHY MANN ADAMS, who served with distinction in the R.A.F. Medical Service during the war, died very suddenly on June 27. She was born on Dec. 13, 1903, studied medicine at Oxford and at King's College Hospital, London, taking the English Conjoint diplomas in 1929 and the B.M., Ch.B. degrees a year later, after holding the post of house-surgeon at the Royal Victoria Hospital, Folkestone. Dr. Dorothy Adams had been medical inspector at Cheltenham Ladies' College before joining the R.A.F. with the relative rank of flying officer early in 1940. She was gazetted war substantive flight-lieutenant in April, 1941, and temporary squadron leader in July, 1943, and was mentioned in dispatches.

The death of Dr. EDWARD BAINES took place at his house in Whitby, Yorkshire, on June 28, at the age of 80. He was the elder son of J. W. Baines, of Leeds, and was born in that city in 1866. From the Leeds Grammar School he went up to Caius College, Cambridge, and took the M.B., B.Ch. of that University in 1892. After graduation he was for a year H.S. at the General Infirmary, Leeds, and for another year H.P. at the Sunderland Infirmary. He first practised at Bowness, Windermere, but after a severe illness a few years later took up public health work and received the D.P.H.Cantab. in 1902. Later he returned to general practice, settling in Whitby in 1906, where he was for many years a member of the medical staff of the Whitby and District War Memorial Hospital and its predecessor. In 1936 he had another severe illness and was thereafter obliged to limit his activities. However, when his son, Dr. E. F. Baines, who had joined him in practice, left Whitby for war service in 1939, Dr. Baines resumed full work, but broke down once more in November, 1940: he had also been serving on the Scarborough Civilian Medical Board. He married in 1900 Miss Adeline Fyfe, who died in 1944; there was one son and one daughter as issue of his marriage. Dr. Baines was a member of the B.M.A. from 1893; but never sought office in the local division. He was a regular supporter for many years of the Royal Medical Foundation of Epsom College.

Dr. THOMAS STRETHILL WRIGHT, who had practised at Okehampton, Devon, and held public appointments there, died on July 1 in retirement. He was born at Hartford, Cheshire, on Dec. 5, 1879, son of S. H. Wright, M.D., F.R.C.P., and was educated at Monmouth School and Brasenose College, Oxford, where he gained classical honours and graduated M.A. in 1906. He then entered St. Thomas's Hospital and obtained the M.B., B.Ch. degrees at Oxford in 1909. He held a temporary commission as captain, R.A.M.C., during the 1914–12 war and at the end of it proceeded M.D. Dr. Wright joined the B.M.A. in 1910 and published notes on trench fever in this *Journal* in 1916. After giving up active work he lived at Prestbury in Gloucestershire.

We regret to announce the death at Beauly, Inverness-shire, on July 4 of Dr. RODERICK MACKAY, who was elected chairman of the Inverness Division of the British Medical Association in 1938. Dr. Mackay was born on Jan. 23, 1900, and studied medicine at the University of Aberdeen, graduating M.B., Ch.B., in 1924, and M.D. with Commendation in 1928, after serving as house surgeon and house physician at the Royal Northern Infirmary, Inverness. While in general practice at Beauly he was medical officer to the Kiltarlity and Array parishes and a member of the Inverness and Ross County Panel Committees. He joined the R.A.M.C. with a temporary commission in January, 1940, and was captured by the enemy on July 10 of that year. His name was brought to notice in recognition of distinguished services and he was repatriated at the end of 1943.

Dr. A. DOUGLAS CROFTS, of Windsor, who died on July 7 after a short illness, studied at Guy's Hospital and, after taking the L.D.S. in 1903, completed the medical curriculum and qualified as M.R.C.S., L.R.C.P. He then held a succession of house appointments at Guy's and was clinical assistant at the East London Hospital for Children and at the Evelina Hospital for Sick Children. During the 1914–18 war he served with a temporary commission in the R.A.M.C. Dr. Crofts held a number of important posts in the Windsor area; he was a member of the Eton College Medical Board, M.O.H. and school medical officer for the borough of Windsor, honorary anaesthetist to the King Edward VII Hospital, and medical referee to the Ministry of Pensions; he was also medical officer to St. George's School, Windsor, and to a number of infant clinics. He joined the B.M.A. in 1912, and had been vice-president of the Windsor and District Medical Society.

We regret to announce that Dr. FRANCIS WILLIAM SCHOFIELD, J.P., died at his home in Bramwell Lane, Stockport, on July 7. He was born at Mossley 65 years ago and studied at the Manchester Medical School, taking the M.B., Ch.B.Vict. in 1902, and a few years later the M.B., B.S.Lond. After qualification he worked as house-surgeon at the Bradford Royal Infirmary, ophthalmic house-surgeon at the Sheffield Royal Hospital, and assistant medical officer at the City Hospital, Sheffield. He had practised at Stockport for nearly 40 years, and at the time of his death was senior honorary surgeon to the Stockport Infirmary, having joined the staff in 1925. During the war of 1914–18 he served with the R.A.M.C. in France and Egypt. Dr. Shofield joined the B.M.A. in 1910, was assistant secretary of the Stockport Division for five years, and chairman for two periods of five years; he was also chairman of the local Medical War Committee and of the recruiting board, and a member of the Panel Committee, and since 1937 had been a magistrate on the Stockport Borough Bench.

His many friends and patients will learn with regret of the passing of Dr. ILJA MARGOLIN, of Hall Green, Birmingham, at the age of 54. Born in Russia, he was interned in Germany during the first world war, and in his early days was a surgeon. Subsequently he established himself as a consulting physician in Berlin, until the advent of Hitler made him a refugee. He qualified in this country and set up as a practitioner in Birmingham. A. W. and S. L. write: His great knowledge, impressive appearance and personality drew many patients from all parts. His house was always a haven of rest for the victims of Nazi persecution. In 1942, in spite of his age, he joined the Forces and was invalided out in 1944. Thereafter he suffered much, but endured with truly marvellous courage. His philosophy was proof against his death, which he forecast almost to the day. In happier times he would undoubtedly have attained high rank in the profession.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on June 27 the following medical degrees were conferred:

D.M.—C. Hollins, C. A. Hinds-Howell.
B.M., B.CH.—J. R. Nassim (in absence).

UNIVERSITY OF BIRMINGHAM

At a Congregation on July 5 the following medical degrees were conferred:

M.D. (*ex-officio*).—S. Zuckerman, C.B., D.Sc., F.R.S.
M.D.—A. E. Chaplin, C. R. St. Johnston, Yvonne J. Williams.
M.B., CH.B.—*P. G. Bevan (distinction in medicine), *Jeannie E. Roulston, E. J. Allaway, Barbara M. Ansell (distinction in surgery), J. R. Baker, W. I. H. Bourne, J. Butler, P. Y. Carlyle, Pamela J. Chappell, Fay P. S. Cull, E. J. Ll. Davies, S. P. Dawson, Rosemary Dearden, W. B. L. Downing, Jean M. MacN. Dunn, Margaret J. Dutton, Jeanette G. Eveson, Barbara M. Finch, Frances A. Fouracres, D. M. Garratt, Joan E. Garside, N. L. Gilburn, F. R. Goodwin, P. H. T. Hall, Norah K. S. Howkins, P. J. L. Hunter, G. A. Jeffery, Jose V. Keats, H. M. Kent, D. E. T. Laird, J. Lapper, Sylvia E. Leather, D. McI. Maxwell, Rosemary G. Mitton, J. Moss, G. C. Richards, P. Rigby, J. M. D. Roberts, T. B. Stirling, J. E. Tremlett, G. M. Turner, Evelyn D. Watkins, F. E. Webb, K. M. Williams, J. T. H. Wise, C. Wood, Mary P. Woodhouse, †Constance M. A. Bachtin, †D. P. Fitzgerald, †G. A. Readett.

* With second-class honours. † *In absentia.*

The following scholarships, medals, and prizes have been awarded in the Faculty of Medicine.

Queen's Scholarship (third year) and *Peter Thompson Prize in Anatomy* (third year), J. A. Ireland. *Queen's Scholarship* (fifth year), W. H. McIlveen. *Queen's Scholarship* (final year), D. H. Barnbrook. *Ingleby Scholarships*, D. H. Barnbrook and J. C. Haworth. *Arthur Foxwell Memorial Medal* and *Russell Memorial Prize*, J. C. Haworth. *Sampson Gamgee Memorial Medal* and *Priestley Smith Prize in Ophthalmology*, J. K. Baird. *Leith Newman Prizes in Pathology* (fourth year): Medical, J. M. Bishop and G. T. S. Willetts; Dental, J. A. C. Smith.

John Barritt Melson Memorial Gold Medal (third year), D. F. Cole. *Industrial Nursing Prize*, Charlotte M. R. Webster. *Alexander Youngson Prize*, P. Goodwin and Dylys A. Owen (divided). *Lawrence Barnard Carlton Scholarship*, E. A. Marsland. *John Humphreys Memorial Prize*, D. S. Shovelton.

UNIVERSITY OF DURHAM

Luccock Medical Research Fellowships have been established by King's College, Newcastle-upon-Tyne, as a result of the bequest of the late Mr. J. W. Luccock, who left his money "to enable research to be made and carried on as to the component parts of the blood of human beings with the view and in the hope that such research investigation and inquiry will be of benefit to the human race and increase the knowledge of the medical and surgical profession as to all matters relating to the blood which may result in the alleviation of human suffering and probably the prolongation of life." Fellows are required to pursue full-time research in the University of Durham in an approved subject in the field of medicine (including dental surgery). Senior fellowships are of the minimum annual value of £600, and junior fellowships £300; supplementary grants in aid of the expenses of the research may be sanctioned by the Council. Regulations governing the award of these fellowships may be had from the Registrar of King's College, Newcastle.

UNIVERSITY OF GLASGOW

At a Ceremony of Graduation held on July 10 the following medical degrees were conferred:

M.D.—J. Reid (with honours), •Margaret D. Giles, D. M. Armstrong, J. Macrae.

M.B., CH.B.—•G. C. Provan, •J. F. Patterson, •Elizabeth M. Dallow, •J. Guthrie, •D. W. Menzies, •J. B. Ritchie, •R. W. L. Heddle, •Susanne Rosenfeld, •W. D. H. Conacher, •H. Stern, G. Adam, L. R. C. Agnew, C. M. Ball, G. N. Beck, W. G. A. Begg, H. Benson, Ruth K. Bowden, Agnes C. L. Bowie, W. Brodie, R. C. Brown, I. A. Buchanan, J. Burgoyne, Janet G. McE. Burnett, J. H. Cameron, F. W. Campbell, G. S. Carrick, J. Carswell, L. Casey, Nulece Cassells, H. Clark, Ruth A. Cohen, D. F. Coulter, Mary G. Coyle, A. J. Crowe, Helen M. Cunningham, Agnes C. Davidson, A. Deuchars, W. W. Douglas, T. Dungavel, A. M. Ferrie, G. H. Field, R. B. Forbes, R. R. H. Ford, W. S. Foulds, K. H. Fraser, W. Garrett, J. B. Gibson, J. McC. Gilmour, Agnes M. Gordon, Elsie R. Gordon, Catriona M. Gourlay, E. G. Green, K. Greig, Anne McL. Haddow, S. Happel, I. Harper, Isabella P. Harvie, R. W. Henderson, R. B. Hendry, M. MacR. Herbert, P. A. Hood, J. R. S. Hutchison, R. McG. Inglis, J. G. Kennedy, J. S. P. Kerr, Ruth A. Keymer, Margaret G. Kirkwood, W. Lees, E. C. Levine, J. Levy, Janet J. Logan, T. Logan, C. P. Lowther, A. McClelland, Sarah C. McEwan, A. J. Maciver, S. McKechnie, W. J. M. Mackenzie, N. A. MacKillop, J. McG. McKinnon, J. Mackintosh, D. A. McLaren, G. K. McLellan, J. F. McMinn, Anna S. MacTavish, A. S. MacVicar, J. S. Marshall, R. Martin, Dorothy J. Miller, J. R. Milne, Mary A. Mullen, I. B. Munro, J. McE. Neilson, A. Poli, J. A. E. Primrose, H. Revill, H. A. N. Richmond, J. L. Robertson, J. S. Scott, W. J. C. Scott, W. Seright, Margaret R. S. Smellie, Margaret A. E. Smith, Mary D. Smith, Marjory B. Snodgrass, J. T. T. Stark, Elizabeth T. Steel, I. F. Stewart, R. G. Stewart, J. Stoll, N. Watson, Anne B. Watt, J. White, Edith J. Whitelaw, L. Whyte, T. Wilson, B. A. Woodger, J. T. Young, T. G. S. Young.

The following prizes and medals were awarded:

Brunton Memorial Prize and *Stockman Medal*: G. C. Provan. *West of Scotland R.A.M.C. Memorial Prize* and *John W. Weir Prize*: Elizabeth M. Dallow. *Macewen Medal in Surgery*: R. W. L. Heddle.

• With commendation.

UNIVERSITY OF DUBLIN

The following medical degrees were conferred on July 3:

M.D.—C. W. Bradfield, D. P. Burkitt, R. H. Simon, R. T. Towson.

M.B., B.CH., B.A.O.—A. B. Boyle, R. P. Brown, T. T. Chapman, C. R. Crawford, D. F. Doherty, R. G. Emerson, P. B. B. Gatenby, Hilary Gruson, Jean F. W. Henry, J. Higginson, N. Jaswon, Ethel O. Johnston, Joan H. Kelly, W. R. Lamb, J. R. Lowe, J. B. H. Lusk, H. F. McElligott, F. H. Moore, F. P. Myles, O. M. O'Malley, R. D. H. Parker, R. M. Pritchard, I. Sevitt, O. M. P. Tobias, Mona C. Warren, R. J. S. Weir, K. H. McK. Young.

QUEEN'S UNIVERSITY, BELFAST

The following candidates have been approved at the examinations indicated:

M.D.—J. H. Scott (with gold medal), •G. F. Adams, •W. H. Hood, •J. A. Smiley, †J. M. Barber, †J. H. D. Millar, J. M. Beare, A. M. Blackstock, A. A. H. Gailey, G. Gregg, R. A. Pyper, R. H. F. Smith, E. C. Torrie.

M.B., B.CH., B.A.O.—S. T. Armstrong, P. K. Boylan, E. J. H. Byrne, A. C. Darrah, C. De Largy, Christina M. Dornan, Irene M. Emerson, Mary F. Gregg, H. Hegan, T. D. Huriott, A. L. Hyman, W. T. Joseph, Dorothea B. Keith, D. Kernohan, B. U. Killen, H. M. M'Clatchey, Dorothy M'Dowell, S. P. M'Gibbon, Doris A. M'Kinley, P. G. MacLarnon B. Murray, J. Patterson, Vivien R. G. Poots, J. Rawe, J. E. Reid, W. B. Rodgers, K. Sax, W. J. W. Speedy, Vera A. Sullivan, C. A. K. Tully, Alice M. Williams, G. Wolfenden.

• With high commendation. † With commendation.

The Department of Health for Scotland announces that ex-Service men and women with first-class qualifications as nursing orderlies will have the chance of becoming State registered nurses after an intensive course of one year. Training for State registration normally takes three years. The General Nursing Council for Scotland, however, has agreed to allow ex-Service men and women to sit the examinations, after this intensive course, if they have had two years' experience of nursing in a Service hospital under State registered nurses, and have, while in the Services, qualified as nursing orderly Class I or nursing member Class I (Army); leading sick berth attendant (Navy); leading aircraftsman or aircraftswoman in the trade of nursing orderly (Air Force).

Medical Notes in Parliament

Free Choice

Mr. JOHN MCKAY on June 28 asked the Minister of Health to give an assurance that under the National Health Service Bill patients would have a free choice of doctors and not be restricted to the doctors covering the district in which the patients lived and who had made a contract of service under the National Health Service Act.

Mr. BEVAN said he could give this assurance. It was intended to give patients the widest possible choice among practitioners taking part in the new Health Services, but the details of the way in which this could be arranged must be a matter for regulations.

Medical Service for Coalminers

Mr. WILLIAM FOSTER, on July 2, invited Mr. Shinwell to make a statement of the progress made in the establishment of a medical service scheme at collieries in the mining industry.

The question was answered by Mr. GAITSKELL. He said arrangements for the erection of five experimental types of medical treatment centres were completed. It was hoped that all would be built and in operation by the end of the year. The construction of permanent centres, following experience with the experimental types, would take much longer. Meanwhile suitable first aid or other accommodation was being adapted at selected collieries for use as centres. The immediate aim was to have about fifty adapted centres in operation as soon as possible. Further progress would be made as labour and materials became available to make the necessary adaptations and the supply of nurses for this work increased.

New Rates of Pay for Medical Services

Mr. LAWSON announced on July 5 revised rates of pay for officers of the medical, dental, and veterinary services of the Armed Forces, and further made a statement on retired pay. Mr. Lawson said that as regards medical and dental officers the Government had decided that, from July 1, 1946, there would be a common scale of pay and time promotion in each of these two branches in all three Services. Officers would be appointed in the rank of acting surgeon lieutenant R.N., lieutenant, or flying officer, and promotion would be by time to surgeon lieutenant R.N., captain, or flight lieutenant after one year, and to surgeon lieutenant-commander, major, or squadron-leader after eight years. Thereafter promotion would be by election. Rates of pay would be as follows:

Approx. Age	Service	Rank	Pay (Daily)
			s. d.
25	On appointment ..	Acting Surgeon Lieutenant R.N., Lieutenant, or Flying Officer	22 0
26	After 1 year's service	Surgeon Lieutenant R.N., Captain, or Flight Lieutenant	28 0
28	„ 3 years' „	„	31 0
30	„ 5 „ „	„	34 0
32	„ 7 „ „	„	37 0
33	„ 8 „ „	Surgeon Lieutenant-Commander, Major, or Squadron-Leader	43 0
35	„ 10 „ „	„	46 0
37	„ 12 „ „	„	49 0
39	„ 14 „ „	„	52 0
		Surgeon Commander, Lieutenant-Colonel, or Wing-Commander (on appointment)	58 0
		„ after 2 years ..	61 0
		„ „ 4 „ ..	64 0
		„ „ 6 „ ..	67 0
		„ „ 8 „ ..	70 0
		Surgeon Captain R.N., Colonel, or Group-Captain (on appointment)	75 0
		„ after 2 years ..	78 0
		„ „ 4 „ ..	81 0
		„ „ 6 „ ..	84 0
		Surgeon Captain R.N. (after 8 years as such), Brigadier, or Air-Commodore	87 0
		Surgeon Rear Admiral, Major-General, or Air Vice Marshal	110 0
		Surgeon Vice-Admiral, Lieutenant-General, or Air Marshal	135 0

Mr. Lawson also furnished a table giving the daily rates of pay for dental and for veterinary officers. He added that it was intended to continue the arrangement under which a medical or dental officer commissioned after holding an approved whole-time appointment in a recognized civilian hospital might be granted an ante-date of seniority. In future, however, there would be a common rule for all three Services and the ante-date, which would count towards the service qualifying for

increments of pay and for promotion to the rank of Major or equivalent in the other Services, would take effect on completion of 12 months' service. The arrangements for the encouragement and reward of specialization were still under consideration.

Turning to Service retired pay and gratuities, Mr. Lawson reported that the new general scheme of service retired pay and gratuities for Regular officers, details of which were given in Appendix III of the White Paper, Command 6750, would also apply to permanent Regular medical, dental, and veterinary officers who were serving on the active list on December 19, 1945, or who were commissioned after that date. There would be some adjustment on the lines of existing arrangements for Naval medical officers who retired with less than 25 years' service after having received the special gratuity of £1,000 which was payable under the old code. Medical, dental, and veterinary officers now serving with permanent Regular commissions would, like other officers, remain eligible, if to their advantage, for awards under the regulations now superseded, instead of the new terms. (See paragraph 67 of Cmd 6750.) Officers who retired with retired pay before December 19, 1945, and who served during the war, would be allowed reassessment of their retired pay in respect of their war service under the terms of the scheme announced in the House on April 15 by Mr. Lawson.

Birth Rate and Population Inquiry

Mr. CHRISTOPHER HOLLIS, on July 8, opened a discussion on the birth rate. He said Britain would have something like a stable population for some time but would, about the 1970's, be in danger of the beginning of a rapidly declining population. Some means should be discovered to prevent this decline. The number of children born depended on the extent to which people were able to have faith in the purpose of life. He pointed out that there had not been the decline in maternal mortality that there had been in every other mortality. One reason for this was the gradual raising of the age at which marriage took place and at which the first child was born. To decrease maternal mortality marriages should take place at an earlier age. That was an economic problem.

Mr. PAGET said the birth rate might have to be corrected by a policy of immigration.

Replying for the Ministry of Health, Mr. KEY said a commission was inquiring into the question of population. Last year they took a family census from which the Government might be able to discover whether the size of families was declining and if childlessness was increasing. There was at the moment a considerable increase in the birth rate and figures seemed to indicate that the size of the family was increasing, but until the Government had a full report from the commission it would not be in a position to analyse the problem nor to know its real causes and its extent. He could not indicate when the commission would finish taking evidence, nor when it was likely to produce its report.

Penicillin Supplies

Mr. WILMOT said on July 8 that supplies of penicillin were steadily increasing, but it would not be possible for some time accurately to estimate the demand. He would consider discontinuing control measures immediately it became apparent that supplies were adequate to meet an uncontrolled demand. At present control was made more effective by taking proceedings against the person who, without approved prescription or authority, tried to buy penicillin, as well as against the supplier.

Oversea Service of Specialist M.O.s

Mr. BOWDEN reported on July 9 that specialist medical officers recently called to the Army were being sent home for six to eight weeks to await posting abroad. Mr. LAWSON explained that drafts of specialist medical officers were normally despatched at monthly intervals, the date of each draft being adjusted to ensure that all the officers comprising it received fourteen days' embarkation leave after their primary training. Occasionally the despatch of officers was delayed because of shipping difficulties or late notice of alterations in oversea requirements. Such cases were exceptional and did not materially affect the position of officers now over-seas who awaited release. In certain theatres and for certain special subjects the release of these officers had been retarded, but this was primarily due to the difficulty of obtaining replacements from the civilian profession.

Bread Rationing Scheme

Mr. STRACHEY announced on July 10 that all hospital nurses qualify for the ration of 11 oz. of bread a day and that hospitals would obtain this allowance for those nurses who were resident. Young manual workers between the ages of 11 and 18 would be rationed both as adolescents and as manual workers and would receive 18 oz. a day, or 14 in the case of girls. He added that this was right, as their psychological and physiological needs for food were especially large. Mr. Strachey estimated the classes of consumers under the bread rationing scheme to be: children under 1, 800,000; children 1–5, 3,000,000; children 5–11, 3,400,000; adolescents 11–18, 5,300,000; normal adults, 22,000,000; expectant mothers, 600,000; manual workers (women), 3,000,000; manual workers (men), 9,000,000.

Notes in Brief

British Guiana maintains seven public hospitals containing in all over 2,000 beds; and Mr. George Hall is satisfied that these arrangements meet the needs of the community. Substantial reconstruction is desirable, and the Government of British Guiana is considering what improvements are possible within the limits set by its financial resources.

Mr. Strachey is anxious that everything possible shall be done to encourage the development of products which can be used to replace soap. Over a thousand firms have already been licensed to produce or market soap substitutes.

Medical News

A meeting of the Middlesex County Medical Society will be held at North Middlesex County Hospital, Silver Street, Edmonton, N., to-day (Saturday, July 20), at 3 p.m.

A Japanese Prison Camp Art Show has been arranged at the Alpine Club, 74, South Audley Street, London, W. It is open daily until July 27, 10 a.m. to 6 p.m. except Sunday. There is an exhibition of drawings and paintings in Chinese mediums by Dr. R. Kenneth McAll, internment camp medical officer 1942–5.

The 150th anniversary of the opening of the Royal Sea-Bathing Hospital, Margate, will be commemorated on the afternoon of July 23 at the hospital, Canterbury Road, Margate. The president, the Earl of Athlone, and H.R.H. Princess Alice, Countess of Athlone, will attend the ceremony.

In connexion with the Davidson Clinic, Edinburgh, a summer school will be held from July 31 to August 6. The main theme will be "Family Relationship." The opening address will be given by Dr. Scott Williamson of the Pioneer Health Centre, Peckham. A series of addresses will be given by Dr. E. A. Bennet of the West End Hospital for Nervous Diseases, London, and discussion groups will be led by members of the Davidson Clinic staff. Further information can be obtained from the secretary, 26, Chalmers Street, Edinburgh.

On July 4 the American Ambassador, Mr. Averell Harriman, unveiled a tablet in the Middlesex Hospital to commemorate a gift of £25,000 to the hospital from the surplus funds of the American Ambulance in Great Britain.

The following members of the medical profession were called to the Bar on July 3: J. Tarsh, M.B., Ch.B., and Squadron Leader F. E. Fletcher, M.B., Ch.B. (Lincoln's Inn); R. C. Burton, M.B., Ch.B. (Middle Temple); and S. C. Gawne, M.D. (Gray's Inn).

Sir Stewart Duke-Elder, ophthalmic surgeon to St. George's Hospital, has been elected an honorary Fellow of the American Medical Association.

The Ministry of Health announces that consequent on the decision to place penicillin on sale through the normal trade channels, the free supply to local authorities of penicillin, including penicillin in oil-wax suspension, for the treatment of venereal diseases will be discontinued; and it will now be necessary for local authorities to place orders for future supplies at trade rates with manufacturers authorized to supply in accordance with the formulae of the *British Pharmacopoeia*.

From June 20 the statutory controls regulating the distribution of nurses (male and female) and midwives ceased to operate. It is no longer necessary for employing authorities to consult the Ministry of Labour and National Service before engaging staff for nursing or midwifery or obtaining recruits to train in these professions. Similarly nurses and midwives or persons seeking to train as such are free to take up appointments or training otherwise than through the nursing appointments offices. In addition, State registered nurses and fully trained midwives will not in future be required on becoming qualified to give a year's special service. In consequence of these changes in the situation, the co-operation of employing authorities in notifying the termination of employment of nurses and midwives is no longer necessary. Restrictions on the engagement of male radiographers and physiotherapists in the age group 18–30 inclusive also come to an end. The removal of these controls does not mean that all persons in the classes specified above are necessarily free to leave their present employment.

After consultation with hospital, nursing, and other interests in Scotland, the Nuffield Provincial Hospitals Trust has undertaken to accept financial responsibility for the establishment in Scotland of a nursing recruitment service similar to that which has operated in England for the past six years under the auspices of King Edward's Hospital Fund for London and the Nuffield Trust. The service will operate by means of nursing recruitment centres in charge of qualified and experienced staff. Lord Nuffield's trustees have appointed a Scottish Nursing Recruitment Committee responsible for the direction of the work, and the members include Sir Robert Nimmo (chairman), Dr. A. Greig Anderson (vice-chairman); Dr. W. L. Burgess; and Prof. Thomas Ferguson.

MACKENZIE INDUSTRIAL HEALTH LECTURE

Dr. Donald Hunter, F.R.C.P., will deliver the Mackenzie Industrial Health Lecture at B.M.A. House on Wednesday, July 24, at 5.45 p.m. The title of the lecture is "Academic Aspects of Industrial Medicine," and admission is by ticket only. The lecture will be confined to persons, lay and medical, who are professionally interested in industrial medicine. Tickets of admission can be obtained from the Secretary, B.M.A. House, Tavistock Square, W.C.1, and early application is requested as the number is limited.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a large fall in the notifications of measles 339, while an increased prevalence was recorded for scarlet fever 122, whooping-cough 47, diphtheria 39, and dysentery 30.

Notable decreases in measles were London 111, Lancashire 47, Cheshire 42. The decline in scarlet fever was fairly general throughout the northern section of the country, but in the southern section a slight rise occurred.

The only large variation in the local trends of whooping-cough was an increase in Essex of 52. The largest fluctuations in diphtheria were an increase of 21 in Lancashire and a fall of 14 in Yorkshire West Riding. Notifications of dysentery were largest in Lancashire 49, London 15, and Warwickshire 10.

In *Scotland* there were decreases in the incidence of diphtheria 24, measles 53, and whooping-cough 25. The largest local fall in diphtheria was Glasgow 14.

In *Eire* the notifications of infectious diseases varied only slightly from the level of the preceding week. Although diarrhoea and enteritis fell by 3 for the whole country, a rise of 10 was recorded in Dublin C.B.

In *Northern Ireland* the only feature of note in the returns was an outbreak of measles involving 16 cases in Ballycastle R.D.

Infectious Diseases During the Second Quarter

Notifications generally during the June quarter of this year have been below the average of recent years.

Notifications in Second Quarter

	1942	1943	1944	1945	1946
Scarlet fever	14,592	23,785	21,692	17,139	13,958
Whooping cough	18,291	27,297	30,347	13,907	25,559
Diphtheria	8,911	8,355	6,973	5,971	4,662
Measles	73,962	127,131	32,344	165,388	42,166
Cerebrospinal fever	1,859	916	873	723	756
Dysentery	1,726	1,683	2,835	5,325	2,259
Paratyphoid and typhoid	207	183	136	119	112

Diphtheria notifications have fallen steadily and are now only slightly over half the total of five years ago. The 4,662 cases in the second quarter of this year give the lowest number recorded in any quarter. The totals for scarlet fever and enteric (typhoid and paratyphoid) are the lowest for the second quarter in recent years.

War Losses

War losses amounted to 400,000 persons for the United Kingdom according to the *League of Nations Monthly Bulletin of Statistics*, No. 5. This figure included: military losses of 245,000 killed and 53,000 missing; 30,200 merchant seamen killed and 5,260 missing. Nearly 60,600 civilians were killed in the United Kingdom, of whom 7,700 were children under 16.

Week Ending July 6

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 997, whooping-cough 2,247, diphtheria 290, measles 4,524, acute pneumonia 478, cerebrospinal fever 37, dysentery 87, paratyphoid 10, typhoid 13.

No. 26

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946 (a)	1946 (b)	1946 (c)	1946 (d)	1946 (e)	1945 (Corresponding Week) (a)	1945 (b)	1945 (c)	1945 (d)	1945 (e)
Cerebrospinal fever	39	5	25	1	2	52	6	33	4	1
Deaths		2	1				2	—		
Diphtheria	313	29	75	29	10	421	29	82	66	16
Deaths	2	1	1	—	—	2	—	—	—	—
Dysentery	123	15	33	7	—	292	33	58	3	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	3	1	—	—	—	—	—	—	—	—
Deaths		—					—			
Erysipelas			32	7	5			44	5	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				47					55	
Deaths	42	6	9	9	2	43	8	5	6	5
Measles*	4,177	866	487	32	25	6,004	249	161	40	6
Deaths	1	1	1	—	—	3	—	—	—	—
Ophthalmia neonatorum	70	7	22	—	—	64	7	12	1	—
Deaths										
Paratyphoid fever	9	1	5 (B)	—	—	7	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	440	24	4	—	2	424	19	9	3	2
Deaths (from influenza)†	5	—	—	—	—	1	—	—	1	—
Pneumonia, primary			164	21				202	10	
Deaths		26		1	7		12		8	12
Polio-encephalitis, acute	—	—				1	—			
Deaths		—					—			
Poliomyelitis, acute	8	1	1	2	—	8	1	2	—	1
Deaths		—					—			
Puerperal fever		4	15		—		5	11		—
Deaths										
Puerperal pyrexia‡	125	8	15	1	—	133	11	18	2	—
Deaths		1					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,063	100	159	23	24	1,255	62	186	25	26
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	6	—	2	4	—	5	—	2	6	—
Deaths	—	—	—	—	—	—	—	1	—	—
Typhus fever	—	—	—	—	—	1	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	2,073	157	64	38	18	1,194	60	46	24	19
Deaths	7	1	1	1	1	1	—	1	1	—
Deaths (0–1 year)	385	48	47	37	16	284	38	38	16	20
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,136	626	574	183	103	3,777	550	539	173	107
Annual death rate (per 1,000 persons living)			12·6	11·7				12·2	11·2	
Live births	8,777	1390	1004	468	280	6,653	803	887	408	280
Annual rate per 1,000 persons living			20·2	30·0				17·7	26·3	
Stillbirths	276	37	46			185	18	22		
Rate per 1,000 total births (including stillborn)			44					24		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.
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ANY QUESTIONS?

Contact Dermatitis in Apiarists

Q.—*An apiarist changed the crates in the hives, and that evening his penis became itchy and swollen. Two days later the penis was lightly erythematous with bullous oedema at the sulcus. The only other lesions were slight swelling of both upper eyelids and minute itchy macules on the front of both wrists and elbows. The oedema subsided and the macules faded, with subsequent fine desquamation, after appropriate treatment. Two identical attacks occurred in May and September last year, and between these attacks he had actually handled bees on several occasions without mishap. What is the explanation of this?*

A.—The description given is almost certainly that of a contact dermatitis. The parts which have been in contact with the excitant become very itching or burning and develop an erythematous, papulo-vesicular, vesicular, or pustular rash, depending on the degree of reaction. This is followed by the formation of crusts or scales. The eruption may be accompanied by swelling of the face, particularly the eyelids. The part of the penis affected would be in agreement with this hypothesis, the excitant being conveyed by the hands. Many apiarists when handling crates cover them with a cloth rinsed in lysol—a common cause of contact dermatitis. If this is not the case with your apiarist other excitants must be looked for and patch tests may be necessary to trace the cause (*Clinical Allergy*, L. Tuft). The treatment is complete avoidance of the cause.

Gastric Aspiration

Q.—*What are the indications for gastric aspiration? How is it performed?*

A.—Intermittent gastric aspiration is an invaluable adjuvant to treatment in pyloric stenosis. With it some cases will settle down completely, and all patients should have the gastric contents aspirated daily and the stomach washed out with normal saline solution for at least a week prior to operation. It should also be employed before Rammstedt's operation for congenital pyloric stenosis in infants as well as in certain types of poisoning. A large stomach-tube, about 1 cm. in diameter, should be used. It should be connected to a funnel by means of a glass connexion and a piece of rubber tubing. The funnel is filled with normal saline solution, and before this has run through the funnel is inverted so that the gastric contents will be siphoned off. This manœuvre should be repeated until the washings are returned clear.

Continuous gastric aspiration is of great value in high intestinal obstruction, after operations on the gastro-intestinal tract, and in all post-operative conditions characterized by vomiting. For this purpose a Ryle's tube is most convenient as it can be passed through the nose and retained in position for several days. Continuous suction is provided by means of an inverted Winchester bottle, which is hung above the patient's head from some convenient stand or bracket by the bedside. It is fitted with a rubber bung through which pass two pieces of glass tubing, one reaching to the bottom and the other going just through the bung. The bottle is filled with water and the Ryle's tube is connected to the longer of the two glass tubes; the shorter tube leads by a piece of rubber tubing to a bucket on the floor. The rate at which the water runs out and at which the gastric contents are aspirated is regulated by means of a screw-clip on the rubber tubing. The quantity of gastric contents removed must be measured, for the patient should not be allowed to become dehydrated; rectal or intravenous saline infusions may be necessary to combat this.

Yeast and Baldness

Q.—*A newspaper reports that in America yeast grows hair on the scalp of even old men. Is that so?*

A.—The newspaper report must have grossly distorted the facts. Greying of the fur occurs in rats kept on artificial diets lacking pantothenic acid and para-aminobenzoic acid, both of which are members of the vitamin B complex and occur in yeast. There is no evidence, however, that either of these substances can cure greyness in human beings. They have both been submitted to clinical trial in America, and the results have been entirely negative. No harmful effects are produced by taking yeast over a long period, although in some people it may cause intestinal flatulence and diarrhoea. It can be taken in the form of yeast tablets, dried yeast powder, or in the form of fresh yeast. There are no reports on the application of yeast to the scalp.

Diphtheria Immunization

Q.—*A.P.T. often causes a reaction in older children. Should one use T.A.F. when doing refresher immunization against diphtheria?*

A.—The refresher or boosting dose of diphtheria prophylactic should, if the child has received a primary immunizing course at one year of age, be given at the time of school entry. While reactions have occurred at this age they are not as a rule serious and do not preclude the use of A.P.T., the best immunizing reagent, for stimulating a waning immunity in young children. If, however, a primary course has been given at, say, four to five years, and it is desired to give a boosting dose five years later, A.P.T. may cause a severe reaction, and it is in this age group that the use of T.A.F. is particularly recommended. Alternatively, the children may be Schick-tested before the proposed boosting dose, and only those showing straight positive reactions should be given a further dose of either A.P.T. or T.A.F. It does not matter whether A.P.T. or T.A.F. has been used for the primary course, and only a small dose of prophylactic (0.2 ml. A.P.T. or 0.5 ml. T.A.F.) is needed as a booster dose to produce the necessary response.

Toxicity of Ketene

Q.—*Can you give me any information about the toxicity of ketene, CH_2CO? What concentration is considered dangerous, and what are its effects?*

A.—Ketene is a colourless gas with a peculiar penetrating smell resembling chlorine and acetic anhydride. It readily polymerizes on standing, and on strong heating decomposes into ethylene and carbon monoxide. Its spontaneous condensation is accompanied by considerable evolution of heat; there may be a fire hazard involved in the handling of it. The literature indicates that ketene is poisonous and irritant, though its precise action on the human body has not been described. It seems to attack mucous membranes, and Staudinger and Klever say that it "produces, even by inhaling small amounts, severe headache." The safest way to handle ketene would be by processing in an enclosed system, so that no one is exposed to its irritant properties.

Travel Sickness

Q.—*What is the best treatment for travel sickness—during the journey and on arrival? Is there any special treatment for air-sickness?*

A.—Experiments done with commando troops during the war showed that the only drug which significantly affected the incidence of sea-sickness was hyoscine; 1/100 gr. (0.65 mg.) may be taken orally before going aboard and repeated if necessary during the journey. There is no need to give any treatment on arrival at the destination, when recovery takes place rapidly. This treatment, which may be used for sea-sickness, air-sickness, or car-sickness, is not invariably successful, but it appears to be the best at present available. It must be borne in mind that in a high proportion of cases the sickness is psycho-

logical in origin. Such cases respond to almost any treatment prescribed with sufficient confidence. Many proprietary remedies owe their apparent efficacy to this fact.

Cause of Psoriasis

Q.—*Is the causative agent of psoriasis carried in the blood stream? What is the latest treatment for it?*

A.—There is no known single causative agent for psoriasis. It is probably different in different individuals and for different attacks, and it may upon occasion be carried in the blood stream—e.g., the toxins from a streptococcal throat may provoke an attack of psoriasis. Treatment is clearly an individual problem for every case, or indeed for every attack of psoriasis. As to the general lines of treatment, the reader should consult a textbook on dermatology or recent papers, e.g., *Encyclopaedia of Medical Practice* (Butterworth).

Dermatitis due to Nail Varnish

Q.—*A mother, aged 59, and her daughter, aged 26, both complain of brittle and splitting finger-nails and an intensely irritating rash on the face. This is usually on the chin and round the mouth, is much drier than the surrounding skin, and peels readily. The nails split into two layers, the top layer becoming torn off in a ragged fashion. Both women are housewives and have their hands often immersed in water, and they use nail varnish. Can you suggest an explanation?*

A.—Two possible explanations are worth consideration. These patients may be suffering from a dermatitis due to nail varnish. This may lead to deterioration of the nails and, without causing dermatitis of the finger ends, may give rise to a very puzzling irritable dermatitis of the face due to the finger-nails touching the face. The patients should be patch-tested for sensitiveness to the varnish by applying a little to the upper arm and observing whether it produces any rash in this site. Treatment would be by abandoning nail varnish.

Another possible cause is general constitutional and nervous debility giving rise to dystrophy of nails and an eczematous eruption of seborrhoeic type on the face. This would call for general medical investigation, especially of the nutritional, endocrine, and nervous side of the problem, and would need treatment along appropriate lines. (See *Journal*, 1941, **2**, 855.)

INCOME TAX

Expenses Incurred while not actually in Practice

"RELEASED," while on service abroad, sold his practice as from January 1, 1946, to his locum tenent. He returned to this country on April 12, 1946, and is acquiring a house and a practice elsewhere as from August 16. He has recently had his car overhauled at a cost of £130. Can he obtain income tax relief on this, either (*a*) by deducting that amount as an expense or (*b*) by adding it to the written down value of his car?

*** As the "wear and tear occurred while the car was used in the practice" it seems equitable that an income tax allowance should be made for the expense, but we are not aware of any provisions of the Income Tax Acts under which such an expense can be deducted if it was incurred when the source of income was not then existing. Additions to written down value are restricted to expenditure on improvements, or additions, and a claim under alternative (*b*) is likely to be refused—but it is the better chance of the two. It follows that further expenses—e.g., on books, instruments, etc., had better be deferred until after August 16.

Payment of Tax under a Misapprehension

J. L. joined the Forces in August, 1942, and his employers agreed to make up his pay to the civilian level. His pay rose above that level, and he notified his employers accordingly; but for a considerable time they continued to make payments to his account and to deduct tax therefrom. The question of refunding to the employers is now being dealt with; J. L. has refunded the *net* amounts paid to him and asks whether the amount representing the tax should not be refunded by the Inland Revenue—who have declined to do so.

*** The tax having been deducted and handed over to the collector, it is J. L. who suffered the tax and is entitled to reclaim it. It is true that the payments from which tax was deducted have proved not to be J. L.'s income at all, but that does not seem to alter the fact that it was J. L. who was regarded as in receipt of the income, and he must be held to have suffered the tax, and therefore to be entitled to any refund that may be due on the facts as they are now established.

LETTERS, NOTES, ETC.

Medical Educational Films

Dr. R. C. MACKEITH, Chairman of the Medical Committee of the Scientific Film Association, writes: Prof. Niels Dungal's survey (June 15, p. 923) is most useful. He has evidently been in closer contact with U.S.A. than this country, but much work has been done here to meet the difficulties he notes. The Royal Society of Medicine financed a joint work by the R.S.M. and the S.F.A., and 800 medical films have been viewed. Catalogues will be published (one is now at the printers) giving the information collected. The S.F.A. agree strongly with Prof. Dungal that it is desirable to be able to obtain an "adequate judgement whether a likely-looking film is really suitable for the purpose desired." Such judgements are provided by the S.F.A. Appraisal Scheme. The S.F.A. Medical Committee are shortly publishing a catalogue of films on anaesthesia which will include content, appraisal, and distributors of each film. As regards "The Need for Organization" the following items will be of interest. 1. Suggestions have been collected from deans of medical schools as to subjects on which they would welcome medical teaching films. These suggestions are available to would-be sponsors of films. A scheme for voluntary co-ordination of production of medical films is in operation and was noted in the *Journal* of May 18 (p. 779). 2. We have been able to promote the printing and circulation of copies of a number of medical films and, pending the setting up of an active central medical film library, we have accepted copies of films. The international exchange of educational films is likely to be taken up actively by Unesco in the not very distant future. 3. In conjunction with the Royal Society of Medicine a very successful meeting was held in February, 1946, to discuss "The Place of the Film in Medical Education." The papers and discussion are being printed as a pamphlet.

Ministrations of the Clergy on Patients in Hospital

In the spring of 1945 a body of laymen, with the expert assistance of two doctors, a clergyman, and a nurse, sent out a questionary to all medical superintendents of hospitals in Denmark and to the clergymen and nurses attached to these hospitals. The object of this poll was to ascertain the attitude of Danish medical superintendents of hospitals to the spiritual welfare of their patients. Altogether 118 superintendents answered the numerous questions set them, and after the omission of eight answers not found appropriate, there remained 110 which are discussed very fully by Dr. Karl Söndergaard in the journal of the Danish Medical Association, *Ugeskrift for Laeger*, for June 13, 1945. A classification of the ages of the medical superintendents failed to show any age difference in their attitude to this problem, presumably because, as Dr. Söndergaard suggests, a man's theological outlook has usually crystallized out for good by the age of 30. But the poll showed that the doctors in charge of patients suffering from chronic diseases were as a class much more interested in the spiritual welfare of their patients than the doctors in charge of hospitals with a rapid circulation of patients. While many medical superintendents gave the clergy attached to their hospitals every facility for getting into touch with their patients, imparting details concerning their health to help the clergy in their appreciation of the situation, other medical superintendents declared that they did not co-operate at all with the clergy, of whom one wrote that they have "neither the right to receive information nor the qualifications to understand morbid conditions." But while some invoked professional secrecy as a reason for passive obstruction, others found they could speak freely with a hospital clergyman who is also bound by professional secrecy and "has just as much right to have access to case records as an ordinary probationer nurse." Dr. Söndergaard finds that the medical superintendents of hospitals were as a class, and with the exception of medical psychiatrists, less familiar with modern psychiatry than the clergy. As was to be expected, the clergy attached to hospitals in the charge of medical superintendents "who cared for none of these things" often found their work disheartening. The most perplexing question, and one which several Danish superintendents declared they did not understand was: "In what do you see the difference between, or the similarity of, psychotherapy and Christian spiritual care?" To which one of the superintendents replied that the difference lay in the object sought, psychotherapy aiming at healing a morbid mental process, Christian spiritual care aiming at helping the patient in his religious life and acting in certain cases as effective psychotherapy.

Treatment of Sterility in Women

Dr. J. B. PRIMMER (Dunfermline) writes: We might do worse than return to some of the older methods. In my early days, before National Health Insurance had been thought of except in Germany, with more time available I used to treat sterility in the patient's home by means of dilatation of the cervix with Hegar's dilators, a method referred to by Dr. D. Currie (June 29, p. 997). The results were good in cases of from two to four years' sterility. If vaginismus was the cause, the wearing of a glass dilator with supports proved effective, though my experience of this was limited.